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MANAGEMENT SITUATION ANALYSIS

MSA

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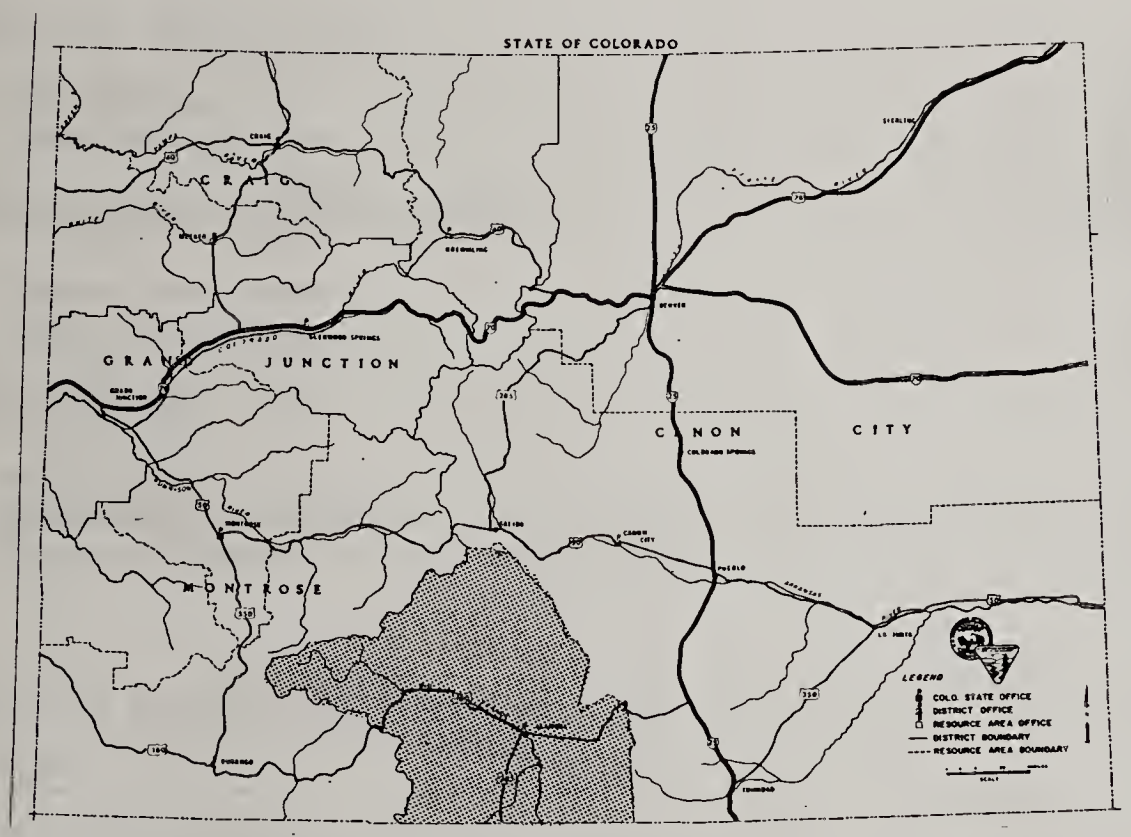

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SAN LUIS RESOURCE MANAGEMENT PLAN

ENVIRONMENTAL IMPACT STATEMENT

3-87

San Luis Resource Area

Public Lands: USA (Use, Share, Appreciate)

CHAPTER 1

CLIMATE

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CHAPTER 1—CLIMATE

RESOURCE AREA PROFILE (RAP)

Description

The San Luis study area is located in a high valley/mountainous, continental climate region characterized by dry air, sunny days, clear nights, moderate/high precipitation, moderate/high evaporation, and extreme daily temperature changes. The Continental Divide and the San Juan Mountains to the west, and the Sangre de Cristo Mountains to the east flank the dry, wide, and flat San Luis Valley. The Rio Grande River flows east from the San Juan Mountains into the center of the valley, and then flows south into New Mexico. The complex topography of the region causes considerable variation in site-specific temperature, precipitation, and surface winds. Extremely frigid conditions and blizzards can occur, but severe weather conditions such as tornadoes, floods, and damaging hail are rare.

The climatology of the resource area is very diverse, and prolonged onsite monitoring is necessary to specify local conditions. The following description represents a range of climatic conditions throughout the resource area.

SLRMP

MANAGEMENT SITUATION ANALYSIS (MSA)

Introduction

This management situation analysis (MSA) consists of three parts: (1) resource area profile (RAP), (2) existing management situation (EMS), and (3) capability analysis (CA). All three parts are to be graphically displayed on GIS theme computer displays as well as narratively described here.

Both the resource area profile and existing management situation will be put in the affected environment chapter of the environmental impact statement. They will be used as the rationale for proposing to manage resources in a particular way and to provide the baseline information for measuring impacts. They may have to be revised after the alternatives and environmental consequences chapters are written. The capability analysis will be used to formulate the alternatives for the environmental impact statement.

This document is a working tool to assist in the development of the RMP/EIS over the next two "+" years. As you read thru and use these sections, please keep in mind that they need to be tempered by the SLRMP topics of concern.

Make changes as needed on your copy . . . . or add any new data. If you feel you should share these changes or new data with other team members . . . . please provide them to the team leader. To remind you of the direction we began the MSA process with, we have included the material on the next page. This gives the basic parameters, guidance, definitions with which to do management situation analysis.

RESOURCE AREA PROFILE 1/

Description of Resource

Tell what, where, and how much. Summarize your inventory.
Reference to data themes should be done.

Condition and trend

Is it in good condition, poor condition?
Is it getting better or worse?
Describe inventory (quality and extent of data).

EXISTING MANAGEMENT SITUATION 1/

Current Management

How is your resource presently managed?
Describe agreements and related policies.

Supply-Demand Analysis and Dependency

Who wants your resource? Who has a use for your resource?
How dependent are they on BLM providing this resource. (Degree of need)

CAPABILITY ANALYSIS 2/

Definition of Capability Resource Levels

Capability Analysis Forms 1 will go here. These forms define what you believe to be most important for management; three levels from most needed down. Use only three levels! Be terse, brief, concise, and incisive!

Management Practices

Capability Analysis Forms 2 will go here. These forms describe the types of management you would prescribe for each resource capability level. What does it take to manage for the three defined levels on Form 1? Be terse, brief, concise, and incisive!

Resource Capability Level Description

Capability Analysis Forms 3 will go here. These forms will describe the areas we have mapped as RCL 1, RCL 2, RCL 3. These specific sites must relate to your data theme material. Be complete as possible but concise.

1/ Most of this material will go directly into the SLRMP/EIS as it is written here.

2/ Most of this material will be used in formulating alternatives and carrying out conflict resolution.

SLRMP
MANAGEMENT SITUATION ANALYSIS
Contents By Chapter and Specialist Responsibility

Chapter	Chapter Title	Specialist Responsible for Preparation of Chapter
1.	Climate	Scott Archer
2.	Air Resources	Scott Archer
3.	Soils	Jerry Harman
4.	Water Resources	Howard Wertsbaugh
5.	Topography	Dave Taliaferro
6.	Geology and Minerals	Kevin Anderson
7.	Paleontological Resources	John Beardsley
8.	Vegetation	Royce Wheeler
9.	Riparian Vegetation	Fran Ackely
10.	Livestock Grazing	Royce Wheeler
11.	Wildlife Habitat	John Schwarz
12.	Forest and Woodland Resources	John Wilson
12.	Land and Realty Actions	Bill Miller
13.	Wilderness	Bill Schneider
14.	Area of Critical Environment Concern	Rick Athearn
15.	Access and Transportation	Fred Martinez
16.	Recreation	Bill Schneider
17.	Visual Resources	Bill Schneider
18.	Historic Resources	Rick Atheran
19.	Archeological Resources	John Beardsley
20.	Fire	Harold May
21.	Economic Conditions and Social Environment	Jeanette Pranzo
22.	Hazards	Fred Martinez

NOTE: Typing/Word Processing done by Elner Rush and Terry McGinness

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CLIMATE

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CHAPTER 1—CLIMATE

RESOURCE AREA PROFILE (RAP)

Description

The San Luis study area is located in a high valley/mountainous, continental climate region characterized by dry air, sunny days, clear nights, moderate/high precipitation, moderate/high evaporation, and extreme daily temperature changes. The Continental Divide and the San Juan Mountains to the west, and the Sangre de Cristo Mountains to the east flank the dry, wide, and flat San Luis Valley. The Rio Grande River flows east from the San Juan Mountains into the center of the valley, and then flows south into New Mexico. The complex topography of the region causes considerable variation in site-specific temperature, precipitation, and surface winds. Extremely frigid conditions and blizzards can occur, but severe weather conditions such as tornadoes, floods, and damaging hail are rare.

The climatology of the resource area is very diverse, and prolonged onsite monitoring is necessary to specify local conditions. The following description represents a range of climatic conditions throughout the resource area.

Condition and Trend

The extent that vertical and horizontal mixing will take place is related to the atmospheric stability and mixing height. Distributions of these factors for selected sites are presented in Table 1-1. Unstable conditions can occur from strong surface heating, typical of summer afternoons, producing upslope winds. Neutral conditions reflect a breezy, well-mixed atmosphere. Stable conditions are enhanced by rapid radiative cooling and downslope drainage, producing the least amount of dispersion.

Spring and summer mixing and transport is generally good, but nighttime cold air drainage, particularly in the fall and winter, can cause extremely low temperatures and the poorest dispersion conditions. Inversions are formed under these conditions, trapping pollutants within a certain layer of air and are enhanced by weak pressure gradients, cold clear nights, snowcover, and lower elevations.

Temperatures vary mostly with elevation, and to a lesser extent, local microclimate. Table 1-2 summarizes monitored values for temperature, precipitation, and frost-free periods throughout the study area. At higher elevations, summer temperatures will probably range from lows of 38°F to highs of 77°F. Winter temperatures may range from -8°F to 32°F. Freezing temperatures and snowfall are possible year around, with snow accumulation likely from September to May. At lower elevations, summer temperatures can range from 48°F to 82°F. Winter temperatures can range from 0°F to35°F. Extreme temperatures throughout the area may drop as low as -42°F or rise to 97°F. Freezing temperatures are likely from September to May with snow accumulation from October to April.

TABLE 1-1
SELECTED ATMOSPHERIC DISPERSION VALUES

Station	Season	Stability Frequency (percent) Unstable	Neutral	Stable	Mixing Height (m) Morning	Afternoon
Alamosa, Colo.	Annual	29	34	37	300-400	2,000-2,600
	Spring	26	47	27	300-600	2,400-3,400
	Summer	39	31	30	300-400	2,400-4,000
	Fall	29	33	38	200-300	1,800-2,200
	Winter	21	27	52	300	1,200-1,400
Pueblo, Colo.	Annual	24	41	35	-	-
	Spring	23	50	27	-	-
	Summer	33	35	32	-	-
	Fall	23	37	40	-	-
	Winter	15	41	44	-	-
Trinidad, Colo.	Annual	24	40	36	-	-
	Spring	21	53	27	-	-
	Summer	33	35	32	-	-
	Fall	24	35	41	-	-
	Winter	18	39	43	-	-

Sources: Holtzworth, 1972, and Pedco Environmental, Inc., 1981.

Table 1-2
Selected Climatic Data

Station	Elev (ft) Mean Sea Level	Temperature (°F) Extreme Min	Mean Min	Annual Mean	Mean Max	Extreme Max	Precipitation (in) Annual Mean	Monthly Max	Monthly Min	Mean Snowfall	Frost-Free Period Mean # Days	Mean Begin Date	Mean End Date
Alamosa	7536	-42	24	42	59	91	7.1	1.3	0.2	37	98	6/1	9/7
Blanca	7750	-38	25	43	60	97	7.8	1.6	0.2	23	112[a]	6/8[a]	9/28[a]
Center	7673	-37	24	42	60	95	7.3	1.3	0.3	28	96	6/6	9/10
Crestone [a]	8115	-16	--	43	--	89	12.0	3.1	0.2	--	140	5/11	9/28
Del Norte	7884	-34	28	43	58	91	10.0	1.8	0.4	46	114	6/1	9/23
Gr Sand Dunes NM	8120	-25	29	44	58	91	10.6	2.2	0.3	37	123	5/29	9/29
Hermit	9000	-40	16	34	53	97	15.7	2.3	0.7	76	11	6/27	7/8
Manassa	7687	-34	23	42	60	94	7.5	1.5	0.2	18	90	6/8	9/6
Monte Vista	7637	-38	24	41	59	91	7.1	1.4	0.2	23	72	6/12	8/23
Rio Grande Res[a]	9455	-38	--	32	--	80	24.7	4.0	0.0	--	1	6/30	7/1
Saguache	7692	-24	27	43	60	93	8.8	1.7	0.2	30	106	6/4	9/18
Salida	7060	-33	29	46	63	95	11.0	1.7	0.6	53	104	5/31	9/12
San Luis [a]	8033	-27	--	39	--	84	12.6	6.2	0.3	--	91	6/10	9/9
Silverton	9272	-37	19	36	53	85	22.4	3.0	1.2	140	10	6/28	7/8
Wagon Wheel Gap	8500	-40	16	36	55	96	11.9	2.3	0.4	53	8	6/29	7/7
Wolf Creek Pass	10642	-19	25	38	51	88	40.8	5.5	1.1	363	8[a]	6/10[a]	6/18[a]

Source: Pedco Environmental, Inc., 1981.
Note: a-U.S. Department of Commerce, 1984.

EXISTING MANAGEMENT SITUATION (EMS)

Current Management

Climatic considerations are incorporated into specific project decisions as needed (i.e., rehabilitation, forage yield, etc.). Site-specific monitoring is also conducted when neçessary.

Supply-Demand Analysis

The generally dry and seasonally frigid conditions of the San Luis Valley restrict both the growing season and diversity of plant life. Mountain areas are also seasonally cold, but increased moisture assists plant growth. Special considerations must be included for rehabilitation project developement.

Technical support is required from the Colorado State Office Air Resource Specialist; Colorado State Climatologist; and the U.S. Department of Commerce--Weather Service.

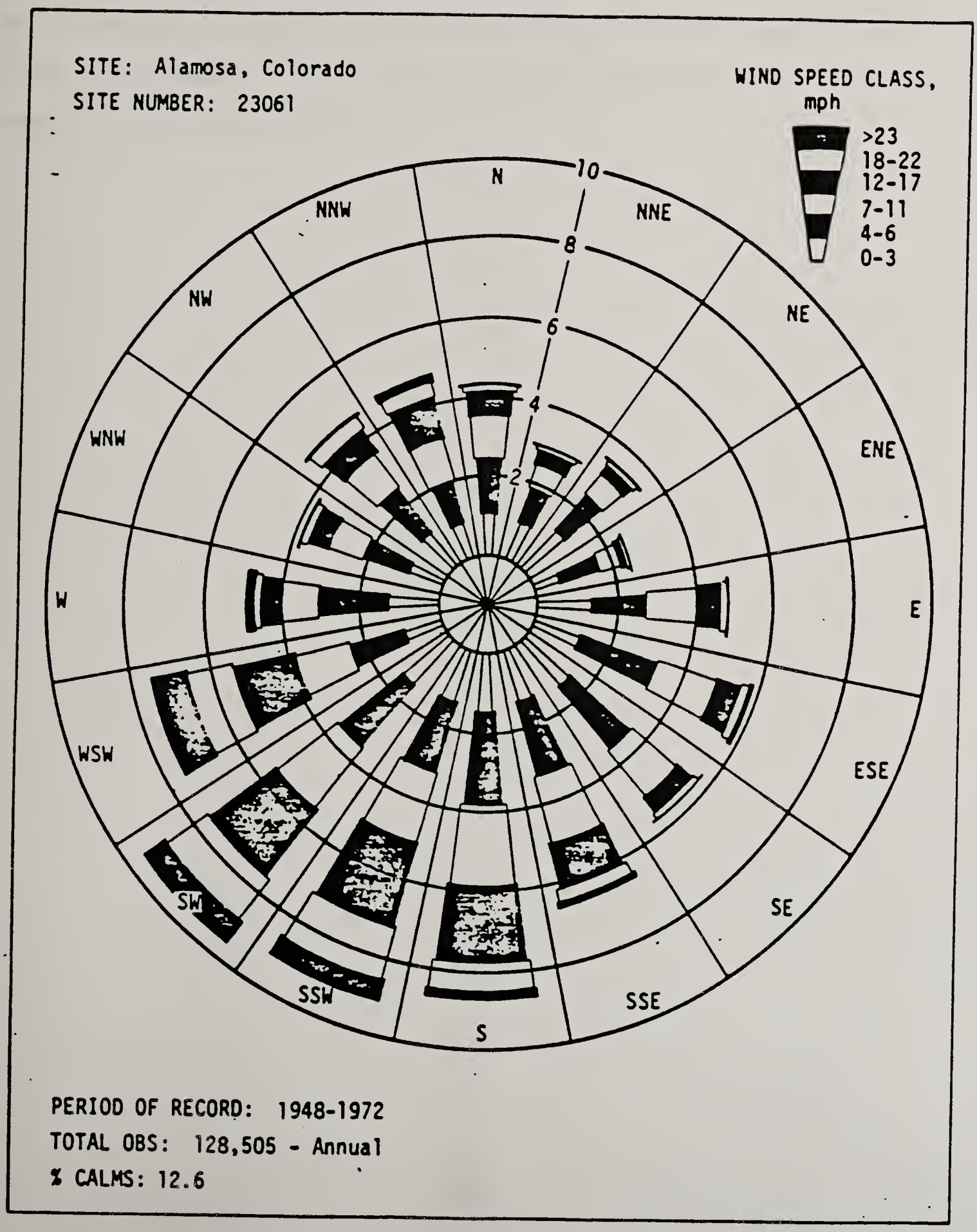
Because of the effects of the San Juan Mountains, annual precipitation in the mountains is among the highest statewide (41 inches on Wolf Creek Pass) and in the San Luis Valley among the lowest (7.1 inches at Alamosa). At the lower elevations, there is a small summer maximum due to thunderstorms; at the highest elevations, most precipitation comes from winter snowstorms. Snowfall amounts vary from 20 inches at the lower elevations to over 360 inches on Wolf Creek Pass; mountainous accumulations vary from 25 to 80 inches.

Although mid-valley winds predominate from the west and southwest (Figure 1-1), areas of diverse and rugged terrain result in complex wind flows and surface winds. Winds of various pressure are forced around hills or channeled through valleys, but without strong gradient flows, daily upslope/downslope winds predominate. Upslope winds usually occur on sunny mornings when the air at higher elevations heats rapidly and rises. Downslope winds occur when the air near the ground cools, becomes dense, and sinks downward along drainages.

Air basins have been defined based on these drainage winds, indicating areas of similar atmospheric flow, topographic influence, and general dispersion potential. The study area is located in the San Luis air basin of Colorado.

Figure 1-1

Annual Surface Wind Rose for Alamosa



Source: Pedco Environmental, Inc., 1981

CAPABILITY ANALYSIS

The following forms describe the definition of the capability resource levels (RCLS), the management practices to be applied to each particular RCL, and specific site(s) within each RCL.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Climate Specialist Name Scott F. Archer

Date 11-21-86

Resource Capability Level 1 (define the highest priority for management)

Incorporate climate limitation considerations into forage yield calculations for rangeland utilization determinations.

Resource Capability Level 2 (define the second highest priority for management)

Incorporate climate considerations into wildlife habitat improvement activity plans to ensure proper species selection.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Climate

Specialist Name Scott F. Archer Date 11-21-86

Describe the types of management that you would use in RCL 1 areas

Based upon procedures currently being developed by the Washington Office--Division of Rangeland Resources, assess the affect growing season weather conditions have no forage production.

Describe the types of management you would use in RCL 2 areas

Utilize knowledge of climatic conditions to select proper plant species for wildlife habitat improvement projects.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Scott F. Archer Area Number (from GIS Theme) N/A

Resource Climate RCL (i.e., 1, 2 or 3) ALL

Date 11-21-86

Description of Area (Species, number of acres, miles, etc.)

Resource area-wide.

Rationale for RCL

The determination of RCL must be made on a case-by-case basis as site-specific proposals are considered.

DATA THEMES

(STILL MISSING)

Need a description of the GIS themes, how they can be used, what is the content, to include a listing of guads used.

REFERENCES

(STILL MISSING)

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AIR QUALITY

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CHAPTER 2--AIR QUALITY

RESOURCE AREA PROFILE (RAP)

Description

Air Quality Regulations

National ambient air quality standards limit the total amounts of specific pollutants allowed in the atmosphere - carbon monoxide (CO), lead, nitrogen dioxide (NO_2), ozone, sulfur dioxide (SO_2), and total suspended particulates (TSP). State standards include these parameters, but may also be more stringent (i.e., Colorado's 3-hour SO_2 standard). These standards were established to protect public health (primary standards) and public welfare (secondary standards). Areas that consistently violate minimum Federal standards because of man-caused activities are classified as "nonattainment" areas, and must implement a plan to reduce ambient levels below the maximum pollution standards (Table 2-1). Under the environmental protection agency (EPA) "Fugitive Dust Policy," areas that violate the TSP Ambient Air Quality Standards, but lack any significant industrial particulate sources and have a population less than 25,000, are designated as "unclassified" areas are generally exempt from having to follow the offset provisions, retofit controls, and new source control requirements established for "nonattainment" areas by the Clean Air Act.

To protect areas not classified as "nonattainment," Congress established a system for the prevention of significant deterioration (PSD) through the clean Air Act Amendments of 1977. Areas were classified by the additional amounts of TSP and SO_2 degradation that would be allowed. PSD Class I areas, predominantly national parks and certain wilderness areas, have the greatest limitations; virtually any degradation would be significant. Areas where moderate, controlled growth can take place were designated as PSD Class II. PSD Class III areas are those areas that allow the greatest degree of impacts. Colorado SO_2 (e.g., Category I).

Existing Air Quality

The existing air quality throughout the resource area can only be surmised; for most pollutants, no monitoring data is available. However, the air quality of the study area is believed to be typical of undeveloped regions in the Western Untied States; ambient pollutant levels are usually near or below the measureable limits. Locations vulnerable to decreasing air quality from extensive development include the immediate operation areas (surface mines, milling operations, power plants), and local population centers with the induced impacts.

TABLE 2-1
STATE AND FEDERAL AIR QUALITY STANDARDS (micrograms per cubic meter)

Pollutant	Averaging Time 3/	Ambient 1/ Federal prim.	Ambient 1/ Federal secon.	Ambient 1/ Colorado prim.	Ambient 1/ Colorado secon.	Increment 2/ Class/ Cat I	Increment 2/ Class II	Increment 2/ Class III
Carbon Monoxide	8 Hour	10000	10000	10000	-	-	-	-
	1 Hour	40000	40000	40000	-	-	-	-
Lead	Quarterly	1.5	1.5	-	-	-	-	-
Nitrogen Dioxide	Annual	100	100	100	-	-	-	-
Oxidants (Ozone)	1 Hour	235	235	160	-	-	-	-
Sulfur Dioxide	Annual	80	-	-	-	2	20	40
	24 Hour	365	-	-	-	5	91	182
	3 Hour	-	1300	700	-	25	512	700
Total Suspended Particulates	Annual	75	60	75	60 4/	5	19	37
	24 Hour	260	150	260	150	10	37	75

Sources: National Ambient Air Quality Standards (40 CFR 50 et seq, 1/5/83)
Requirements for Implementation Plans (40 CFR 51.24, 9/3/82)
Approval of Implementation Plans (40 CFR 52.21, 6/25/82)
Code of Colorado Regulations (Volume 5, Part 14, 5/27/80)

Notes: 1/ Ambient standards are the absolute maximum level allowed to protect either public health (primary) or welfare (secondary).

2/ Incremental (Prevention of Significant Deterioration) standards are the maximum incremental amounts of pollutants allowed above a baseline in regions with clean air. The Colorado Category I increments are identical to the Federal Class I increments.

3/ Short-term standards (those other than Annual or Quarterly) are not to be exceeded more than once each year, except the Federal ozone standard. Under federal regulations, the "expected number of days" with ozone levels above the standard is not to be exceeded more than once per calendar year.

4/ The Colorado annual secondary TSP standard was established as a guide zn assessing implementation plans to achieve the 24-hour standard.

Most of the resource area has been designated a PSD Class II, attainment area. Some towns have measured high TSP levels (exceeding the standards), but since the cause is primarily natural fugitive dust, these towns have been designated "unclassified" for TSP. PSD Class I areas in the resource area include the La Garita, Weminuche, and Great Sand Dunes Wilderness Areas. These areas and the Great Sand Dunes National Monument are also Colorado Category I Areas.

Condition and Trend

Higher TSP concentrations are to be expected near towns due to local combustion sources and unpaved roads; significant regional TSP levels are probably due to fugitive dust (primarily wind blown). Since fugitive dust particulates are larger than those produced in combustion processes, they settle relatively quickly and present a minimal inhalation health treat. The Environmental Protection Agency may alter the existing TSP regulations to reflect this difference by setting standards for particulates less than 10 microns in diameter, commonly called unhaulable particulates and abbreviated PM-10. Average and extreme monitored background concentrations of TSP are presented in Table 2-2. Preliminary estimates for pollutant concentrations in the study area are presented in Table 2-3.

PSD Class I regulations also address the potential for impacts to air quality related values (AQRVs). These AQRVs include visibility, odors, and impacts to flora, fauna, soils, water, geologic, and cultural structures. Visibility impacts can occur from atmospheric increases in small, light-scattering particles or increases in light-absorbing gases (typically NO_2). Although

not monitored in the resource area, standard visual range values are expected to exceed 70 miles during nonwinter periods. A possible source of impact to AQRVs is atmospheric deposition (acid rain). Mechanisms of atmospheric deposition are currently under study; preliminary results have correlated ambient sulfuric and nitric acids with combustion by products (sulfates and nitrates). Selected atmospheric deposition data are presented in Table 2-4.

TABLE 2-2
SELECTED AMBIENT POLLUTANT CONCENTRATIONS DATA
(micrograms per cubic meter) 1/

Station Name/Type	Year	Total Suspended Part. No. Obs	Total Suspended Part. Ann Geo Mean	Total Suspended Part. 2nd 24-hr Max	PM-10 Ann Arith Mean	PM-10 2nd 24-hr Max
Alamosa/Urban	1985	67	49	128		
	1984	81	52	146		
	1983	88	51	235		
	1982	88	52	145		
Pagosa Springs/ Urban 2/	1985	59	115	339	(57)	(183)
	1984	85	114	395		
	1983	85	101	268		
	1982	84	120	376		
Trinidad/Urban 2/	1985	3	(22)	(22)		
	1984	85	48	113		
	1983	85	49	126		
	1982	82	46	167		

Source: Colorado Department of Health, n.d.

Note: 1/ Values in parenthesis lack reliability due to limited sample size. Underlined values indicate violation of Ambient Air Quality Standards.

2/ Monitor located outside the study area.

TABLE 2-3
PRELIMINARY ESTIMATED RURAL POLLUTANT CONCENTRATIONS
SAN LUIS RESOURCE AREA (micrograms per cubic meter) 1/

Pollutant 2/	Annual Mean	Quarterly Mean	2nd 24-hr Max	2nd 8-hr Max	2nd 3-hr Max	2nd 1-hr Max
Carbon Monoxide	--	--	--		--	
Lead	--			--	--	--
Nitrogen Dioxide		--	--	--	--	--
Oxidants (Ozone)	--	--	--	--	--	
Sulfur Dioxide		--		--		--
Total Suspended Particulates		--		--	--	--

Source: _____, 1986.

Note: 1/ Values are conservative indicators of ambient concentrations developed for internal use by the Colorado Air Pollution Control Division and should not necessarily substitute for on-site monitoring data. The values (particularly TSP) indicate the ambient pollution levels in general geographic areas, not a specific location. Values are subject to change as new data are acquired.

2/ Total suspended particulate values are geometric means; all others are arithmetic means.

TABLE 2-4
SELECTED ATMOSPHERIC PRECIPITATION DATA (pH)

Quarter	Alamosa, CO No. Obs	Mean	1st Min	2nd Min
Jan - Mar 1980	__	.	.	.
Apr - Jun 1980	__	.	.	.
Jly - Sep 1980	__	.	.	.
Oct - Dec 1980	__	.	.	.

Source: Natural Resource Ecology Laboratory, n.d.

EXISTING MANAGEMENT SITUATION (EMS)

Current Management

The air resources management program was established to limit air quality degradation in the planning area by assuring that public land use activities comply with Federal, state and, local legislation.

For example, prescribed burns must comply with BLM Manual Section 7723, Air Quality Maintenance Requirements, to minimize air quality impacts from resulting particulates. This procedure requires obtaining an approved open burning permit from the state prior to implementation.

Existing air quality is inventoried to establish a baseline from which changes associated with BLM or other agency proposals may be determined. BLM personnel coordinate with state and Federal agencies and private organizations to assemble existing monitoring data. Additional monitoring may be implemented by BLM when necessary.

Future impacts from BLM actions are assessed prior to implementation. Site-specific project plans for proposals affecting BLM and adjacent lands are reviewed for compliance with existing laws and policies protecting these areas. Mitigation may be incorporated into project proposals when necessary to reduce potential impacts.

Supply-Demand Analysis

Because of the existing good air quality and lack of large industrial development in the resource area, no unusual restrictions are anticipated, except during periods of poor dispersion (stagnation). Continued urbanization will likely lead to increased carbon monoxide, nitrogen dioxide, and particulate concentrations. These impacts will be minimized through compliance with air quality regulations.

Technical support is required from air resource specialists in the BLM-Colorado State Office; U.S. Forest Service-Region II; U.S. Environmental Protection Agency-Region VIII; and the Colorado Department of Health-Air Pollution Control Division.

CAPABILITY ANALYSIS

The following forms describe the definition of the capability resource levels (RCLS), the management practices to be applied to each particular RCL, and specific site(s) within each RCL.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Air Quality Specialist Name Scott F. Archer

Date 11-21-86

Resource Capability Level 1 (define the highest priority for management)

Review site-specific project plans affecting BLM and adjacent lands for compliance with existing laws and policies protecting air quality. Incorporate mitigative measures to reduce air quality degradation when necessary.

Resource Capability Level 2 (define the second highest priority for management)

Apply smoke management procedures (outlined in BLM Manual 7723) prior to and during prescribed burning activities.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Air Quality

Specialist Name Scott F. Archer Date 11-21-86

Describe the types of management that you would use in RCL 1 areas

Utilize the predictive capabilities available through the Colorado State Office Air Resource Specialist to review project proposals, predict resultant air quality conditions, and propose mitigative measure when necessary.

Describe the types of management you would use in RCL 2 areas

Comply with requirements of BLM Manual 7723 to ensure smoke is minimized from prescribed burns. Utilize the predictive capabilities available through the Colorado State Office Air Resource Specialist to review project proposals, predict resultant air quality conditions, and propose mitigative measures when necessary.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Scott F. Archer Area Number (from GIS Theme) N/A

Resource Air Quality RCL (i.e., 1, 2 or 3) ALL

Date 11-21-86

Description of Area (Species, number of acres, miles, etc.)

Resource area-wide.

Rationale for RCL

The determination of RCL must be made on a case-by-case basis as site-specific proposals are considered.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Soils

Specialist Name Jerry B. Harman Date 11-26-86

Describe the types of management that you would use in RCL 1 areas

Management of the soils resource would be based on the compatibility of specific soil capabilities with proposed uses, and the implementation of management practices that provide for long-term productivity. Surface disturbing activities such as prescribed burning, chaining, disking, seeding, road building, timber sales, and ORV usage would receive special attention. See soils MAPs No. 3-1 and No. 3-2. Site specific - refer to GIS soils database.

Describe the types of management you would use in RCL 2 areas

N/A

Describe the types of management you would use in RCL 3 areas

N/A

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Jerry B. Harman Area Number (from GIS Theme) SLS

Resource Soils RCL (i.e., 1, 2 or 3) RCL 1

Date 11-26-86

Description of Area (Species, number of acres, miles, etc.)

See soils overlays No. _____ and No. _____. For other than general planning for land uses, use the soils GIS database.

Rationale for RCL

See management practices under capability analysis.

DATA THEMES

(STILL MISSING)

Need a description of the GIS themes, how they can be used, what is the content, to include a listing of guads used.

REFERENCES

(STILL MISSING)

CHAPTER 4

WATER RESOURCES

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CHAPTER 4--WATER RESOURCES

RESOURCE AREA PROFILE

Description

Surface Water

The San Luis Resource Area is located near the headwaters of the Rio Grande River, in a large structural basin known as the San Luis Valley. For the most part, the public lands form a band around the rim of the valley, separating the agricultural land on the valley floor from the higher timber and rangeland of the Rio Grande National Forest.

The major streams in the area originate on National Forest land in the San Juan, La Garita, Saguache, and Sangre de Christo Mountains. Two exceptions are Trinchera and Culebra Creeks, which originate on the Sangre de Cristo and Trinchera land grants. All streams in the valley are tributary to either the Rio Grande river or the Closed Basin. The Closed Basin is a 2,940 square mile watershed in the northern part of the valley that has no surface outlet. The total watershed area of the San Luis Valley is about 5 million acres. The public lands comprise 516,000 acres, or about 10 percent of the total.

Thirty four perennial streams, with a combined length of about 630 miles, pass through about 46 miles of public land. Thus, approximately 7 percent of their channel length could be directly affected by management of the Bureau of Land Management (BLM). The 8 most important streams and their lengths are shown in Table 4-1.

TABLE 4-1
Eight Most Important Streams

Stream	Total Miles	BLM Miles	% BLM
Rio Grande River	150	12.0 1/	8
Saguache Creek	70	0.5	1
Alamosa River	60	2.0	3
La Jara Creek	60	3.4	6
San Luis Creek	48	1.9	4
Kerber Creek	25	0.5	2
Carnero Creek	21	0.3	1
Rock Creek	18	0.3	2
Total	452	20.9	5%

1/ Rio Grande River Borders BLM on one bank only.

The remaining 26 streams, with a combined total length of 178 miles, flow through about 25 miles of public land. All but one of these streams are tributary to the Closed Basin.

In contrast to the perennial streams, most of the drainages originating on public lands are ephemeral (a few are intermittent). Most have low gradients and many flow over large alluvial fans. Runoff usually results from intense summer thunderstorms, although heavy, wet, spring snow occasionally produces flow. Stream flow is reduced significantly by transmission losses, primarily by percolation into the ground water system. Runoff from watersheds on the public lands reaches perennial streams via surface routes only during extreme storm events.

The average annual water supply to the San Luis Valley has been estimated at 2.5 million acre feet (Davis Engineering Services Inc., 1974). The U.S. Geological Survey estimates that 2 million acre feet are consumed by evapotranspiration, and about one-half million acre feet leave the valley via ground water underflow and streamflow across the state line. The estimated annual water yield from public lands is 35,000 acre feet (Gifford et.al., 1975). This represents 1.4 percent of the total annual supply.

Ground Water

The San Luis Valley is well known for its huge ground water resources. The floor of the valley is underlain by water-bearing sedimentary deposits that are miles thick. Unconfined (water table) ground water is found at shallow depths and is easily obtained. However, much of the unconfined water is of low quality, and unsuitable for domestic or agricultural use.

Below the unconfined aquifer lies an immense confined (artesian) aquifer system. This aquifer produces large quantities of good quality water, and has been extensively developed for agricultural, domestic, and municipal purposes. Since 1976, development of the confined aquifer has been strictly regulated by the Colorado State Engineer.

Around the fringes of the valley floor (where most of the public land is located), the occurance of ground is much more variable. Along the base of the Sangre de Christo Mountains, water is found in alluvium and in igneous, metomorphic, and sedimentary rock formations. Along the west side of the valley, volcanic rocks of various types predominate. Most wells located above the valley floor yield relatively small quantities of good quality water. The primary uses are for stock and domestic water. Where aquifers outcrop, especially in the northwest part of the valley, many springs occur. These springs are important sources of water for wildlife and livestock. About 100 springs have been found on public lands.

Water Quality

All of the streams passing through the public lands have good to excellent quality of water. The exception is Kerber Creek, which is heavily polluted from mining wastes. Kerber Creek passes through about one-half mile of public land just downstream from the Bonanza mining district, where the pollution originates.

Ground water in the San Luis Valley is generally of very high quality. The large exception is the unconfined aquifer of the valley floor, which in many places contains water with high levels of dissolved solids.

Floodplains and Alluvial Valley Floors

Although virtually every drainage on, or passing through, the public lands is subject to flooding, the only floodplain, in the classical sense, is along the Rio Grande River. In eastern Conejos County, about 12 miles of public land border the Rio Grande's western bank. Most of this land is in narrow canyon country, and the floodplain area is not extensive.

There are no alluvial valley floors on public lands in the San Luis Resource Area.

Condition and Trend

Surface Water

Perennial streams on the public lands are in good to excellent condition, and in stable trend, with the exception of Kerber Creek and Ford Creek. Kerber Creek suffers from severe pollution by heavy metals. The trend is a table to very slowly upward, as streambanks revegetate and pollutants are washed away. Lower Ford Creek is in poor hydrologic condition due to eroded streambanks and down cutting of the channel. The trend is more or less stable, although some streambanks continue to erode.

Many ephemeral drainages, especially on the west side of the valley, are in poor condition. This is due to erosion and down cutting that has occurred in years past. The trend is stable to slowly improving, although a few headcuts are still active.

Most intermittent streams on the public lands are in good hydrologic condition, with stable trend. Poison Gulch and Upper Sanderson Gulch are two exceptions. Both of these drainages once contained wet meadows. Erosion has cut through these meadows and lowered the water table. Raw banks and advancing headcuts still exist, but the trend is generally stable to very slowly improving.

Ground Water

The condition of ground water in terms of quantity and quality is generally good to excellent. The exception is the unconfined aquifer of the valley floor, where the quantity is excellent, but the quality is poor.

The trend of quantity and quality of the water from aquifers surrounding the valley floor is stable. The trend of these characteristic's in the unconfined aquifer is unclear, and studies are underway to help understand just what the trend is. The artesian head in the confined aquifer has dropped over the years, but the quality appears to be stable. The confined aquifer has been the subject of many studies over the years, and it is likely that these studies will continue, so that any adverse trends can be detected.

Floodplains

The condition of floodplains along the Rio Grande River is considered good, despite the fact that the riparian vegetation is poorly developed. This appears to be due to a lack of alluvial deposits along the channel, rather than to mismanagement of the floodplain. The trend appears to be stable.

EXISTING MANAGEMENT SITUATION

Current Management

Surface Water

The resource area must comply with Federal, state, and local regulations governing water use and management. State water quality standards have been set that follow those formulated at the local level in Section 208 Water Quality Management Plans. By ensuring that Bureau management actions enhance or maintain water quality, the BLM conforms with state water quality regulations, as well as the water quality provisions of the Clean water Act, and the Federal Water Pollution Control act. Before any work is permitted in perennial stream channels, Section 404 permits are obtained from the Army Corps of Engineers as required by Federal Law.

Some use is made of surface water on public lands by fishermen and other recreationists. Some consumptive use of streamflow is made where livestock and wildlife drink from the streams. An effort is currently underway to quantify these uses and to apply for state water rights to ensure that these uses can continue.

Monitoring of the aquatic health of most perennial streams is being done by the fisheries program. The hydrology (soil and water) program analyzes occasional grab samples to determine basic water quality, and to detect any trends. The soil and water program also monitors precipitation, runoff, and sediment production from 5 small watersheds, to determine impacts and trends related to livestock grazing.

A modest amount of money ($5,000 - $10,000) is programmed each year to maintain existing erosion control structures and to correct erosion problems resulting from off-road vehicle use.

Ground Water

About 36 wells have been drilled for the purpose of stockwater. All of these wells have been registered with the State Engineer, with the exception of 4 flowing wells near Moffat. These wells were drilled prior to the establishment of the BLM.

Near the south end of the Closed Basin, 37 wells have been drilled into the confined aquifer, and 6 more are contemplated. The purpose of these wells is to provide water for fisheries and wildlife habitat, primarily waterfowl nesting habitat. Applications for rights to use this ground water are currently before the State Water Court in Water Division 3.

All of the developed springs and most of the undeveloped springs on public lands are used for stock water and water for wildlife. The BLM has acquired decrees for state water rights on 87 of the 100 or so springs on public land, and has filed application for water rights on the remainder.

All BLM management actions (such as issuance of a permit to drill an oil well, or construction of a BLM water well) conform with local, state, and Federal laws and regulations; especially those concerning water rights and protection of ground water quality.

Floodplains

Management of floodplains must comply with Federal Executive Order 11988, "Floodplain Management". Essentially, this executive order prohibits the construction of permanent structures within the 100-year floodplain and restricts any activity which could interfere with the "natural and beneficial functions of a floodplain". Executive Order 11988 also regulates the transfer of any Federally owned floodplain to any non-Federal individual or organization. Therefore, before public land containing floodplains can be transferred to any non-Federal owner, stipulations must be written into the deed that restrict development and use of the floodplain.

Supply-Demand Analysis

The water resources of the San Luis Valley are extremely important locally, as well as downstream in New Mexico and Texas. Colorado is bound by interstate compact to deliver a certain amount of water to users in New Mexico and Texas. Irrigated agriculture is the economic keystone of the entire San Luis Valley. In some years, there is not enough water to satisfy the needs of all these users. In addition, there is an increasing demand to expand irrigated land in the valley, as well as schemes to divert water from the Rio Grande to other river basins along Colorado's front range.

Bureau of Land Management's annual consumptive use of water is estimated at 5,100 acre feet, of which 4,550 acre feet is used by the Blanca Wildlife Habitat Area. This figure represents 0.25 percent of the total consumptive use in the San Luis Valley. Compared to the valley as a whole, the production and consumption of water on the public lands is fairly insignificant.

CAPABILITY ANALYSIS

The following forms describe the definition of the capability resource levels (RCLS), the management practices to be applied to each particular RCL, and specific site(s) within each RCL.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Surface Water Specialist Name H. Wertsbaugh

Date 1-22-87

Resource Capability Level 1 (define the highest priority for management)

Intermittent streams that have potential to be restored to perennial streams, and perennial streams in poor condition.

Resource Capability Level 2 (define the second highest priority for management)

All other surface water.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Surface Water

Specialist Name H. Wertsbaugh Date 1-22-87

Describe the types of management that you would use in RCL 1 areas

Amend existing allotment management plans to provide for structural treatment and special grazing systems as needed to restore streams to their pre-existing condition.

Describe the types of management you would use in RCL 2 areas

Review all proposed management actions to ensure that laws and regulations protecting water quantity and quality are complied with.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name H. Wertsbaugh Area Number (from GIS Theme) SWS, WTP

Resource Surface Water RCL (i.e., 1, 2 or 3) 1,2

Date 1-22-87

Description of Area (Species, number of acres, miles, etc.)

RCL-1: 5 miles of stream

RCL-2: 46 miles of stream

Rationale for RCL

RCL-1: has potential for improvement

RCL-2: is at potential condition

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Around Water Specialist Name H. Wertsbaugh

Date _____

Resource Capability Level 1 (define the highest priority for management)

All ground water in San Luis Resource Area.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Ground Water

Specialist Name H. Wertsbaugh Date 1-22-87

Describe the types of management that you would use in RCL 1 areas

Ensure that all management actions comply with laws and regulations protecting water rights of others and ground water quality.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name H. Wertsbaugh Area Number (from GIS Theme) None

Resource Ground Water RCL (i.e., 1, 2 or 3) 1

Date 1-22-87

Description of Area (Species, number of acres, miles, etc.)

Resource Area Wide

Rationale for RCL

Ground water is necessary for management of the public lands and for the economy of the San Luis Valley.

DATA THEMES

Water Sources Theme (WRS)

This theme shows all sources of water on the public lands that are needed for recreation, livestock, and wildlife management. Water sources include wells, springs, perennial streams, and intermittent streams.

Quadrangles Used

Chester
Bonanza
La Sauses
Laughlin Gulch
Lobatos
Lookout Mt.
Manassa N.E.
Mesito Res.
Mirage
Antonito
Baldy
Bushnell Peak
Centro
Del Norte
Dog Mt.
Fox Creek
Kiowa Hill
La Jara Canyon
Saguache
Sky Valley Ranch
S. Fork West
Terrance Reservoir
Twin Mt. S.E.
Vincente Canyon
Villa Grove
Zapata Ranch
Klondike Mine
Graveyard Gulch
Goshawk Dam
Poncha Pass
Lake Mt.
Whale Hill

Quadrangles Used Cont'd

Fulcher Gulch
Greenie Mt.
Hickey Bridge
Indian Head
Harrence lake
Moffat South
Lake Mt. N.E.
Sweede Corners
Twin Peaks
Pikes Stockagde
Hooper S.E.
Medano Ranch
Grouse Creek
Dry Lakes
Trickle Mt.
Lime Creek
Valley View Hot Springs
Ute Mountain

Surface Water Streams Theme (SWS)

This theme shows all perennial streams on public land in the resource area.

Quadrangles Used

Chester
Bonanza
Whale Hill
Villa grove
Valley View Hot Springs
Klondike Mine
Lake Mountain
Grouse Creek
Saguache
Bushnell Peak
Trickle Mountain
Mirage
Zapata Ranch
Poncha Pass
Medano Ranch
Baldy

Quadrangles Used Cont'd

Del Norte
Greenie Mountain
La Jara canyon
Terrance Reservoir
Lime Creek
Ute Mountain
Mesito Reservoir
Lake Mountain N.E.
Centro
Hickley bridge
South Fork West
Vincente Canyon
Kiowa Hill
Pikes Stockade
Indian head

Surface Water Lakes and Ponds (SWL)

This theme shows all lakes and ponds on the public lands in the San Luis Resource Area.

Quadrangles Used

Dry Lakes
Goshawk Dam
Vincente Canyon
Lake Mountain N.E.
Whale Hill
Kiowa Hill
Fox Creek
La Jara Canyon
Terrance Reservoir
Mesito Rsevoir
Trickle Mountain
Poncha Pass
Medano Ranch
Lobatos
Centro
Twin Peaks

REFERENCES

Davis Engineering Services Inc. 1974. Water Quality Management Plan, Rio grande basin of Colorado.

Emery, P.A., Snipes, R.J., and Dumeger, J.M., 1972. Hydrologic Data for the San Luis vAlley, Colorado. Colorado Water Conservation Board basic Data Release Number 22.

Emery, P.A., 1971. Hydrology of the San Luis Valley, South-Central Colorado. U.S. Geological Survey, Hydrologic Investigations Atlos, HA 381.

Gifford, G.F., Hawkins R., and Williams J.S., 1975. Hydrological Impacts of Livestock grazing on National Resource Lands in the San Luis Valley. Unpublished report prepared for the Bureau of Land Management. Utah State University.

Powell, W.J., 1958. Ground Water Resources of the San Luis Valley Colorado. Geological Survey Water-Supply Paper 1379.

U.S. Bureau of Reclamation Engineer, Alamosa, Colorado (groundwater studies and closed basin).

Ron Stieger, U.S. Geological Survey-Water Resources Division, Pueblo, Colorado (water production, use and quality in Rio Grande Basin).

Dennis Felmlee, Colorado Division of Water Resources, Alamosa, Colorado (water rights in the San Luis Valley).

Pete Bryant, Rio Grande County Commission, Del Norte, Colorado (History of Mishab Wells).

Ralph Curtis, Rio Grande Water Conservation District, (BLM Water Rights and Consumption) Alamosa, Colorado (use of water + 208 Water Quality Program).

CHAPTER 5

TOPOGRAPHY

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CHAPTER 5--TOPOGRAPHY

RESOURCE AREA PROFILE (RAP)

Description

The San Luis Valley is a large north-trending topographic depression bordered on the east mainly by the Sangre de Cristo Mountains and on the west mainly by the San Juan Mountains. The portion of the valley that lies in Colorado is nearly 100 miles long and ranges in width from 20 miles in the north, to 150 miles in the center, to 50 miles or more in the south. The valley floor is essentially a flat featureless plain with an elevation ranging from 7,500 to 7,900 feet. The San Juan Mountains gradually rise to elevations of 12,000 to 13,000 feet, with some peaks over the Continental Divide higher than 14,000 feet. The Sangre de Cristo Mountains rise abruptly from the valley floor to elevations over 14,000 feet. Steep alluvial fans extend from the rugged eastern range down to the valley floor. The San Luis Hills, a series of hills and mesas that rise 500 to 1,000 feet above the valley floor, lie in the southern portion of the valley near the community of San Luis. Active sand dunes, located in the Great Sand Dunes National Monument, contain a relief of approximately 800 feet.

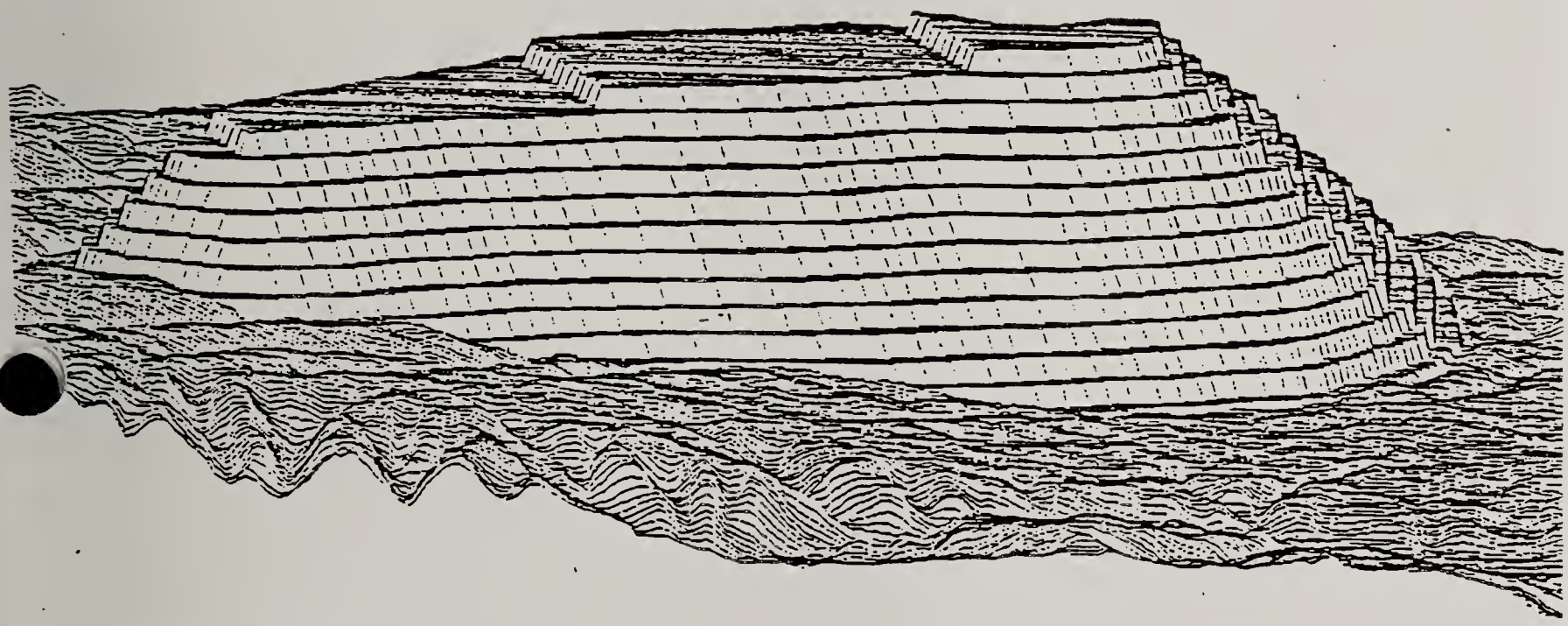
The public lands lie near the outer edges of the valley adjacent to mountain fronts. As a result, most of the land is steep and mountainous with rock outcroppings and steep canyons or gradually sloping alluvial fans dissected by small drainages.

These topographical features have been shaped through eons by changing geologic and climatic processes. The mountainous and rocky areas were formed by volcanic activity which folded and uplifted the crust of the earth. Formation has also been affected through time by the processes of weathering and erosion. Gradually, sloping alluvial fans were formed by intermittent streams carrying vast quantities of weathered rock debris from adjacent mountain fronts to the valley below. These natural processes are still active today, although their results would not be seen within one person's lifetime, nor even for several centuries.

Human presence in the valley has had no noticeable effect on regional topography. Perhaps local features have been altered or obscured by human activity, but the scale of activities, such as livestock grazing, agriculture, and mining, has been minute and the effects of activities short-lived compared to the age-old geologic and climatic processes that form topography.

DATA THEME

One topographic theme has been developed for this RMP effort. The theme is the Digital Elevation Model (DEM). The digital data shows differences in topography at points across a quad map. This is measured in standard elevations above sea level (see attached example of DEM). Eighty-four quads are involved in the SLRMP. As of March 1987, 47 quads are available and loaded in the MOSS user data base for DEM. Thirty-seven more quads will be produced by the end of April 1987.



REFERENCES

1. San Luis Resource Area Grazing Environmental Impact Statement, Bureau of Land Management, May 1978.

CHAPTER 6

GEOLOGY AND MINERALS

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CHAPTER 6--GEOLOGY AND MINERALS

RESOURCE AREA PROFILE (RAP)

Description

Minerals and Geology

The San Luis Valley and the adjacent San Juan and Sangre de Cristo Mountain Ranges have long been an area of focus for mineral exploration and development. The diverse geologic and mineral resources associated with this area provides an opportunity for continued use of and exploration for mineral values from the public lands within the San Luis Resource Area (SLRA).

The following information provides a synopsis of the mineral resource values present or having the potential to be present within the San Luis Resource Area.

Leasable Minerals

Geothermal

The San Luis Valley is a structural, sediment filled basin within the Rio Grande Rift Zone. This rift zone presents one of the more promising geothermal resource areas in Colorado because the region has (1) undergone recent volcanism and other igneous activity, (2) tectonic activity resulting

in numerous faults extending to depth, (3) high heat flow values present, (4) good reservoir rocks and trapping mechanism, and (5) a good source of available water. With the presence of these features essentially located throughout the entire San Luis Valley, the potential for utilization of this resource exists; however, the determination of specific areas for development is difficult due to a lack of available subsurface and geophysical data. Therefore, the use of surface expressions in the form of hot springs is the most readily available means for identifing areas of geothermal potential. The following lists the known geothermal springs and wells within the San Luis Valley:

Name	Location	Average Temp	Average Discha
Mineral Hot Springs	Sec. 12, T. 45N., R. 9E., NMPM	60°C	10 GPM
Valley View Hot Springs	Sec. 36, T. 46N., R. 10E., NMPM	35°-37°C	60 GPM
Shaws Warm Spring	Sec. 33, T. 41N., R. 6E., NMPM	30°C	34-50 GPM
Sand Dunes Swimming Pool Hot Water Well	Sec. 27, T. 41N., R. 10 E., NMPM	44°C	N/A
Splash Land Hot Water Well	Sec. 34, T. 38N., R. 10E., NMPM	40°C	N/A
Dexter Warm Spring	Sec. 8, T. 35N., R. 11E., NMPM	20°C	5 GPM
McIntire Warm Spring	Sec. 18, T. 35N., R. 11E., NMPM	10°-14°C	N/A

(Barrett and Pearl 1978)

Currently there are no existing known geothermal resource areas (KGRA) within the San Luis Resource Area however, prior to _____ there were three KGRAs. These designations, have been eliminated due to a reappraisal of leasing interest in this area.

Oil and Gas

Oil and gas seeps have been reported in the San Luis Basin since the late 1800s. However, despite the presence of porous and permeable sandstones, thick widespead clays for seals, and shows of hydrocarbons, only about 15 oil and gas tests have been drilled in the 2,500 square miles of the basin and most of these before 1955. This lack of exploration activity has essentually left the basin a frontier region for oil and gas activity. Recent activity including extensive seismic activity and exploration drilling has resulted in a better understanding of the stratigraphy, structure, and possible trapping mechanisms within the SLRA. Essentially the SLRA presents two areas for potential oil and gas exploration and development:

The San Luis Basin

The faulting and rifting of the Sangre de Cristo uplift resulted in the formation of the San Luis basin. This basin was then filled by Tertiary clastic and volcanic rocks to a depth of approximately 20,000 feet adjacent to the Sangre de Cristo mountains. This basin fill can be divided into four units consisting in descending order as the Alamosa fm; the Santa Fe fm; an unnamed Paleocene to Eocene unit, and the Vallejo fm. Potential trapping mechanisms consist of pinchouts and truncations, fault traps, and structural closures.

The San Juan Sag

This foreland basin, formerly adjacent to and west of the Laramide Sangre de Cristo Uplift, remained intact following formation of the San Luis Basin to the east. This basin was then concealed by more than 10,000 ft. of volcanic and volcaniclastic rock with only a small window of Cretaceous rock exposed near Quartz Creek to indicate the potential sedimentary sequence buried beneath this volcanic cover. The potential stratigraphic sequence beneath the volcanic cover could involve Paleozoic (Permo-Pennsylvanian), Jurassic, Cretaceous, and Tertiary sediments. Recent exploration drilling has confirmed the presence of a sedimentary sequence for this region. The completion of the Kirby Petroleum Company's No. 1 Jynnifer well northwest of Del Norte Colorado with an initial production of 30 barrels of oil and 80 MCFGPD established the first production of oil and gas within the San Luis Valley.

Extensive seismic, geophysical, and exploration drilling within both regions of the San Luis Valley will be required in order to adequately evaluate this area for oil and gas resource potential.

Sodium

Sodium salts consisting of sodium carborate, sodium sulfate, and sodium chloride with some associated potassium are found in the San Luis Lake. Some shipments of soda were made from this area during the 1930s; however, no production figures are available. The area is localized and no other areas are known to be present within the resource management plan (RMP) area.

Coal

The SLRA has no potential for the pressence of coal resources.

Locatable Minerals

For the purposes of this planning effort, the San Luis RMP area will be divided into eastern and western halves in order to more adequately describe the locatable mineral resources in these areas. These areas were established by geologic setting, variations in mineral resources, and depositional environments.

Eastern Side of the San Luis Valley (Sangre de Cristo Range)

This area has been the focus of extensive mineral exploration and development since the late 1800s and contains numerous and highly diversified occurrences of locatable minerals. The following list provides information on past and present mining districts and mineralized areas:

Mining District (MD) and/or Mineralized Area (MA)	Approximate Location	Commodities Present	(1985) Production Record
Blake MD	T.44,45,46,47,N., R.10,11E.		N/A
Crestone MD	T.43,44N., R.12E.	Gold, Silver, Lead, Copper	$275,000
Liberty MD	T.25S., R.73W.	Gold, Silver	150 oz Au; 1,000 oz Ag
Blanca MD	T.27,28W., R.72,73W.	Gold, Silver, Tungsten	4000 oz Au; 7,000 oz Ag 1,000 tons Tungsten ore
Raspberry Creek MA	T.47N., R.9E.	Lead, Silver	N/A
Steel Canyon MA	T.46N., R.10E.	Silver, Lead,	7,000 oz Ag; 70,000 lbs Pb 8,000 lbs Cu

(1985)

Mining District (MD) and/or Mineralized Area (MA)	Approximate Location	Commodities Present	Production Record
Orient Mine	T.46N., R.10E.	Iron Ore	1,700,000 tons
Wild Cherry Creek MA	T.45N., R.11E.	Silver, Lead, Copper	100 oz Ag; 6,000 lbs Pb 500 lbs Cu
Triple T Mine MA	T.45N., R.11E.	Gold, Silver, Copper	300 oz. Au; 2,000oz Ag 300,000 lbs Cu
King Turquoise Mine MA	T.34N., R.11E.	Turquoise	$67,000 gem Turquoise

Other types of locatable mineral resources that have been identified as having potential in the eastern part of the San Luis Valley are fluorite, thorium, rare earth elements and uranium.

Based on available production figures and reliable estimates, the total production of locatable minerals from the eastern half of the San Luis Valley is: 1,450 ounces of gold; 10,600 ounces of silver; 308,500 pounds of copper; 76,000 pounds of lead; and 1,700,000 tons of iron ore; $67,000 of gem-quality turquoise.

Western Side of the San Luis Valley (San Juan Mountains)

The San Juan volcanic field dominates the western side of the San Luis Valley. This volcanic complex has been the setting for significant occurrances of base and precious metal (gold, silver, lead, zinc, and copper) mineralization. For the most part these mineral deposits have been associated with collapsed Tertiary volcanic structures ("Calderas") and associated igneous intrusives. At least five calderas are known to occur along the western flank of the San Luis Valley and of these at least two occur within or in close proximity of the SLRA. The Bonanza Caldera is in the northern part of the valley and production here was dominated by silver and lead. The Platoro-Summitville Caldera complex is located in the southeastern part of the San Juan Mountains and was principally a gold-silver region. Mineralized intrusives, which could have a bearing on mineralization within the SLRA, include: Alamosa River, Cat Creek, Jasper, and Biedell stocks, the Twin Mountain Intrusives and an intrusion near Jack Creek northwest of Saguache. Other mineral occurrences are present outside of these areas; however, these occurrences are generally small, isolated areas.

The following list provides information on mineralized areas situated within or identified as having influence on the SLRMP area.

Mining District (MD) and/or Mineralized Area (MA)	Approximate Location	Commodities Present	(1985) Production Record
Bonanza MD	T.45,46,N., R.6,7E.	Ag, Pb, Zn, Cu	$12,000,000
Crystal Hill MD	T.42,43,44N., R.6E.	Au, Ag	N/A
Jasper MD	T37N., R3,4E. T.37N., R. 5E.	Au, Ag, Pb, Cu, Alunite	N/A
Summitville MD	T36N., R.4E.	Au, Ag, Cu	$ 7,500,000
Platoro MD		Au, Ag, Cu, Pb	N/A

Mining District (MD) and/or Mineralized Area (MA)	Approximate Location	Commodities Present	(1985) Production Record
Copper Butte MD	T.45N., R.8E.	Cu	N/A
Jack's Creek MD	T.46N., R.6E.	Ag, Pb, Zn	N/A
Cat Creek MA	T.36,37N., R.6E.	Pb, Zn	N/A
Tracy Canyon MA	T.44N., R.6E.	Ag, Au, Cu, Pb, Zn, Mo	N/A

Based on available information from production records and reliable estimates, the total production for the western part of the San Luis Valley is: 311,900 ozs. of Au; 6,454,000 oz of Ag; 16,898,000 lbs of Cu; 45,473,000 lbs of Pb; 9,723,200 lbs of Zn; and 3,500 lbs of gem turquoise.

Other mineral resources showing potential within the western side of the San Luis Valley include uranium, thorium, and perlite.

Salable Minerals

Occurrences of sand and gravel, building stone, and other types of mineral materials are widespread throughout the area of the SLRMP. Because of the low unit value and high transporation costs associated with mineral materials in general, only those areas representing positive potential for development and use are identified in the following discussion.

Cinders

South of Centro and Capulin is a large deposit of volcanic cinders. This area is part of a large basaltic plateau and contains cinder deposits potentially suitable for commercial exploration. Of particular interest is the Los Magotes and San Luis Hills area. Potential cinder deposits could also be present within the San Luis Hills.

Dimension Stone

Volcanic rock suitable for building purposes occur southeast of Del Norte, Colorado. At least three quarries have operated in this area previously and significant reserves of this material remain for use. A small amount of marble has been quarried from gently folded Paleozoic limestones in the Steel Canyon area. This deposit is small and localized in extent.

Sand, Gravel and Riprap

Areas representing potential for utilization of these mineral materials are located throughout the SLRMP area. Areas with good potential for sand and gravel development include the Saquache Creek Valley west of Saquache; the area north of Crestone, in the area of Monte Vista and Del Norte; the area west of the Great Sand Dunes National Monument, and south of the Alamosa National Wildlife Area. These areas and numerous other sites within the valley could receive use for sand and gravel based largely on the needs of immediate construction projects.

Rockhound Areas

A number of rockhound areas occur in the San Luis Valley. These collecting localities are found at: Old Woman Creek, the Crystal Hill Area, Trickle Mountain, and the Villa Grove Mine.

Old Woman Creek

Geodes and agates are reported to occur along the Old Woman Creek northwest of Del Norte. None were observed during fieldwork.

Crystal Hill Area

Geodes occur along Sanderson Creek, adjacent to a perlite deposit. The geodes contain microcrystalline quartz and a few have cavities lined with dusty quartz crystals.

Moderately large quartz crystals have been found in and around the mine dumps at Crystal Hill.

Trickle Mountain

Petrified wood is found on the west side of Trickle Mountain. The exact location is in the SE¼SE¼ Sec. 8, T. 45 N., R. 5 E., NMPM. The multicolored pieces of petrified wood show the annual rings very well.

Villa Grove Mine

North of Villa Grove is the old Villa Grove Turquoise Mine. It is a large open pit mine that produced about 3,500 pounds of gem turquoise from the early 1950s through the mid 1970s. This mine is a possible rockhound area though it is primarily of private land.

Condition and Trend

Leaseable Minerals

Geothermal

The current uses of geothermal resources in the San Luis RA is primarily for recreational activities with some use for industrial space heating. The current number of geothermal leases and the associated lease acreage are identified in the current geogological management section and substantial increase in these figures and exploration interest is not expected based on current economic conditions. Current uses should continue with some possible increase in space heating utilization.

Oil and Gas

The San Luis Valley was the focus of very limited oil and gas exploration activity until about 1981 when a new concept concerning the potential presence of Cretaceous, Jurassic, and Paleozoic sediments beneath the San Juan Volcanics was first seriously considered. During the period subsequent to this date, extensive geophysical data and confirmation of the presence of sediments beneath the volcanic cover by exploration drilling has been completed. The first production of oil and

gas within the SLRA was made in 1985 by Kirby Petroleum. With this discovery and the completion of the South Fork Development Contract, further exploration of the western portion of the SLRA should occur at a much increased rate. This amount of activity is dependent on economic factors that greatly influence the amount of exploration work conducted in a frontier oil and gas area such as this.

Locatable Minerals

The SLRA as indicated has a long history of locatable mineral exploration and development. This exploration and resultant development have been cyclic and depends largely on economic factors; i.e., with a large increase in price exploration and development activity increases, and vice versa with a large drop. The trend is for continued activity of this type based largely on economics.

Salable Minerals

Because of low unit value and high transportation costs, deposits of mineral materials such as sand and gravel, building stone, and cinders are valuable for the most part only when they are near market sites. Currently most commercial use of mineral materials is from private sources close to population centers with primary use of public land resources for site-specific projects in remote locations. This trend is expected to continue with a possible increase due to depletion of private resources and/or interest in a specific commodity.

EXISTING MANAGEMENT SITUATION

Current Management

General

Minerals fall into three categories for management by BLM. These categories are leasable, locatable, and salable.

Leasable Minerals

Presently within the SLRA leasable minerals include geothermal and oil and gas. These resources are made available for exploration and development through the issuance of a lease for each specific commodity. The lessee pays an annual rental and/or royalty for this right and any development or exploration is subject to the terms and conditions of the lease as well as applicable rules and regulations.

Locatable Minerals

These are minerals subject to location under the Mining Law of 1872, as amended, and can include, but are not limited to; gold, silver, lead, copper, zinc, uranium, and thorium. Exploration for and development of these resources, is in general accomplished by the discovery of minerals and subject to filing of a location mining claim. This claim provides a property right to the claimant to develop the mineral resources subject to location, and provided all conditions of the law are met provides for the patenting of the claim in fee simple.

Salable Minerals

These include, but are not limited to; dimension stone, flagstone, sand and gravel, clay, cinders, and riprap. These mineral materials are made available for use by issuance of a free use permit to other governmental agencies or by sale contract to individuals or companies.

Leasable Minerals

Geothermal or geothermal resources are managed in accordance with the SLRA Geothermal Umbrella Environmental Assessment (EA) and all applicable rules and regulations. This EA identifies the terms required for issuance of a geothermal lease for public lands within the resource area. These lease terms are divided into four categories with acreage figures for each given as follows:

Management Category	Low Potential	Moderate Potential	High Potential	Unknown Potential	Total
Open: Standard stips					
Open: NSO or similar constraints					
Closed: Discretionary					
CLosed: Nondiscretionary					

There are currently no known geothermal resource area designations within the SLRMP area, and no producing leases. There are _____ leases within the SLRA containing approximately _____ acres of land. No drilling or exploration activity occurred during 1985.

Oil and Gas

Geophysical exploration and oil and gas operations on Federal leases within the SLRA are conducted in compliance with the SLRA Oil and Gas Umbrella Environmental Assessment and all applicable rules and regulations. This umbrella EA identifies specific terms and conditions for oil and gas leases issued for public lands in the SLRA. These lease terms can be divided into four categories with their associated acreage figures as follows:

Management Category	Low Potential	Moderate Potential	High Potential	Unknown Potential	Total
Open: Standard stips					
Open: NSO or similar constraints					
Closed: Discretionary					
CLosed: Nondiscretionary					

There are no Known Geologic Structure (KGS), designations nor producing leases within the SLRA. The South Fork Oil and Gas Development Contract was approved effective June 1, 1985, and involves 773,119 gross acres in Archuleta, Conejos, Mineral, Rio Grande, and Saquache Counties. There are currently _____ leases for _____ acres of public land within the SLRA.

Locatable Minerals

Locatable minerals within the resource area include, but are not limited to, gold, silver, copper, lead, zinc, uranium, thorium, molybdenum, iron, and turquoise. These minerals are managed under the 1872 Mining Law as amended, with surface use of the mining claims subject to the 3809 and 3802 regulations and a Memorandum of Understanding (MOU) between BLM and Colorado Mined Land Reclamation Division. Operations under a Notice of Intent (NOI) and Plan of Operations (POO) have averaged on a yearly basis, six NOIs and one POO. There are _____ acres of public lands closed to mineral entry within the SLRA.

Salable Minerals ⟶

Mineral materials available for disposal in the SLRA include, but are not limited to, sand and gravel, moss rock, building stone, cinders, and riprap. Authorization for use of these commodities is by competitive and noncompetitive sale and by free use. All authorizations are completed in accordance with the 43 CFR 3600 regulations and all applicable rules and requirements.

During FY 85 mineral material disposals within the SLRA consisted of seven noncompetitive sales for a total of 29,000 tons of material.

Salable minerals are currently made available from _____ community pits and _____ common use areas within the SLRA. Mineral material sites are situated in the following locations:

Location	Type of Permit	Type of Mineral Material
T.45N., R.6E., sec 12	Fee Use	Riprap
T.45N., R.9E., sec 29	Free Use	Decomposed Granite
T.44N., R.11E., sec 34	Free Use	Sand and Gravel
T.44N., R.7E., sec 34	Community Pit	Moss Rock
T.40N., R.6E., sec 3	Free Use	Riprap
T.40N., R.6E., sec 9	Free Use	Riprap
T.39N., R.6e., sec 11	Noncompliance Sale	Ornamental Stone
T.35N., R.8E., sec 19	Free Use	Riprap
T.35N., R.7E., sec 32	Free Use	Sand and Gravel
T.27S., R.73W., sec 29	Free Use	Sand and Gravel
T.28S., R.73W., sec 31	Noncompliance Sale	Sand and Gravel'
T.38N., R.13E., sec 6	Free Use	Sand and Gravel
T.46N., R.6E., sec 25	Common Use	Riprap

Supply-Demand Analysis and Dependency

Leasable Minerals

As indicated the San Luis basin has good potential for the presence of geothermal resource; however, the demand for development of these resources has been and is expected to continue at a low scale. Of the _____ acres of public land with low to high potential only _____ leases for a total of _____ acres currently exist, with little known interest in the acquisition of new leases in this area. The dependency on public lands for this resource is low and in all probability will remain so.

Oil and Gas

The San Luis RA until the completion of the No. 1 Jynnifer well, had no production of oil and gas whatsoever. However, with this discovery and the completion of the South Fork Development Contract the demands for geophysical exploration and leasing of public lands for oil and gas should increase. Currently _____ oil and gas leases exist in the San Luis RA covering _____ acres of public lands. It is believed that with further activity and interest these figures should increase. Since much of the area currently recieving interest for oil and gas exploration is either USFS or public lands, this activity will eventually become quite dependent on these acres and, therefore, should be made available.

Locatable Minerals

As identified, significant potential for the presence of locatable mineral resources, especially near the mountain ranges, exists in the San Luis Valley. Therefore, this potential, makes the demand on public lands in these areas quite high during periods of commodity price upterms and can just as dramatically make demand low with drastic price declines. The potential for resource exploration and development is present; however, economics play a major role in the demand for these resources. The existence of public lands in areas of resource potential could make development of these resources quite dependent on the public lands.

Salable Minerals

The presence of a very large resource of salable minerals (i.e., sand/gravel) in the SLRA makes supply of this type of commodity far exceed the demand. The exception to this is the presence of cinders in the Los Mogotes area where demand for this type of material from a regional or statewide basis could exceed supply. This area should receive special consideration to assure the availability of this resource for utilization. In addition the need for material for a site-specific use (i.e., road base and riprap) could change the supply-demand situation of a particular area. The aggregate figures for the SLRA in 1984 were _____ tons with the public lands providing _____ of this figure availability of this resource from the public lands is not currently dependent on the San Luis Valley.

CAPABILITY ANALYSIS

The following forms describe the definition of the capability resource level (RCLs), the management practives to be applied to each particular RCL, and the specific site(s) within each RCL.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Minerals - Locatable Specialist Name K. Andersen

Date 11-10-86

Resource Capability Level 1 (define the highest priority for management)

Areas within the resource area identified as having a medium to high potential for the presence of locatable minerals.

Resource Capability Level 2 (define the second highest priority for management)

Areas within the resource area identified as having a low potential for the presence of locatable minerals.

Resource Capability Level 3 (define the third highest priority for management)

The remainder of the resource area.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Minerals - Oil and Gas Specialist Name K. Andersen

Date 11-19-86

Resource Capability Level 1 (define the highest priority for management)

Areas within the resource area identified as having moderate potential for oil and gas resources and the area within the South Fork Development Contract.

Resource Capability Level 2 (define the second highest priority for management)

Areas within the resource area identified as having a low potential for oil and gas resources.

Resource Capability Level 3 (define the third highest priority for management)

Remainder of the resource area.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Minerals - Geothermal Specialist Name K. Andersen

Date 11-19-86

Resource Capability Level 1 (define the highest priority for management)

Areas within the resource area identified as having a moderate to high potential for the presence of geothermal resources.

Resource Capability Level 2 (define the second highest priority for management)

Areas within the resource area identified as having a low potential for the presence of geothermal resources.

Resource Capability Level 3 (define the third highest priority for management)

Remainder of the resource area.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Minerals - Salable Specialist Name K. Andersen

Date 11-19-86

Resource Capability Level 1 (define the highest priority for management)

Common use and free use areas established to meet long-term and site-specific use needs.

Resource Capability Level 2 (define the second highest priority for management)

Disposal through competitive and noncompetitive sale when market conditions exceed supply and available private resource capabilities cannot be expanded to meet this need.

Resource Capability Level 3 (define the third highest priority for management)

All areas within the resource area having a high, moderate, or low potential for the presence of mineral material commodities.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Minerals - Locatable

Specialist Name K. Andersen Date 11-19-86

Describe the types of management that you would use in RCL 1 areas

1. Assure that public lands remain open for the exploration, location and development of minerals resources.

2. All surface use of lands subject to claims would be conducted in accordance with the 3802 and 3809 regulations and to prevent unnecessary and undue degradation of resource values.

3. Assure that mining claimants are provided all the rights and privileges provided by law and other regulations.

Describe the types of management you would use in RCL 2 areas

See RCL-1 Narrative

Describe the types of management you would use in RCL 3 areas

See RCL-1 Narrative

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Minerals - Leaseable Oil/Gas

Specialist Name K. Andersen Date 11-19-86

Describe the types of management that you would use in RCL 1 areas

1. Assure that public lands are open for oil and gas leasing.

2. Assure that only stipulations that are necessary, justifiable, and not subject to existing law, regulations, and operating orders are made a term and conditon of the lease.

3. Provide for public lands to be open for geophysical exploration.

Describe the types of management you would use in RCL 2 areas

Refer to RCL-1 Narrative

Describe the types of management you would use in RCL 3 areas

Refer to RCL-1 Narrative.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Minerals - Leasable-Geothermal

Specialist Name K. Andersen Date 11-19-86

Describe the types of management that you would use in RCL 1 areas

1. Assure that public lands are open for geothermal leasing.

2. Assure that only stipulations that are necessary, justifiable, and not subject to existing law, regulations and operating orders are made a term and condition of the lease.

Describe the types of management you would use in RCL 2 areas

Refer to RCL-1 Narrative

Describe the types of management you would use in RCL 3 areas

Refer to RCL-1 Narrative.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Minerals - Salable

Specialist Name K. Andersen Date 11-19-86

Describe the types of management that you would use in RCL 1 areas

1. Inventory and monitor existing sites to assure that suitable materials are available for utilization.

2. Coodinate with other Federal, state and local governement agencies to provide suitable material for utilization by these organizations.

3. Assure that use authorizations are completed in accordance with applicable rules regulations and requirements and that such use is of benefit to the public.

Describe the types of management you would use in RCL 2 areas

1. Inventory and respond to market conditions for mineral materials through either industry application or known mineral resource situation.

2. Assure that use authorizations are completed in accordance with applicable rules, regulations and requirements and that such use is of benefit to the public and does not directly compete with private supplies.

Describe the types of management you would use in RCL 3 areas

Refer to RCL-1 and 2 Narratives.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name K. Andersen Area Number (from GIS Theme) _____

Resource Minerals - Locatable RCL (i.e., 1, 2 or 3) 1,2,3

Date 11-20-86

Description of Area (Species, number of acres, miles, etc.)

RCL-1: ___ acres of public land have been identified as having a moderate to high potential for locatable minerals (i.e., gold, silver, copper, uranium . . . .).

RCL-2: ___ acres of public land have been identified as having a low potential for locatable minerls (i.e., gold, silver, copper, uranium . . . .).

RCL-3: ___ acres of public land have been identified as having an unknown potential for the presence of locatable minerals.

Rationale for RCL

RCL-1 These are areas within the resource area with existing locatable mineral operations, past mineral operations, or at based on available information and have been identified as having characteristics conducive to the presence of locatable mineral resources. These areas present the best likelihood for mineral exploration and possible development.

RCL-2 These are areas within the resource areas that have been identified as having potential for the presence of locatable mineral resources, however, available information indicates that the geologic environment is less conducive for the presence of mineral resources.

RCL-3 These are areas which have very limited potential and/or have limited information available concerning the geology/minerology, upon which to make a judgement concerning this potential for locatable mineral resources.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name K. Andersen Area Number (from GIS Theme) _____

Resource Minerals - Geothermal RCL (i.e., 1, 2 or 3) 1,2,3

Date 11-20-86

Description of Area (Species, number of acres, miles, etc.)

RCL-1: ___ acres of public land have been identified as having a moderate to high potential for the presence of geothermal resources.

RCL-2: ___ acres of public land have been identified as having a low potential for the presence of geothermal resources.

RCL-3: ___ acres of public land which have an unknown potential for the presence of geothermal resources.

Rationale for RCL

RCL-1 These are areas of potential based on available information concerning geology, location of surface expression, prior KGRA designations, and leasing interest. These areas are believed to be those most likely to warrant management needs as a result of geothermal resource activity.

RCL-2 These are areas of potential within the resource area with a low potential for the presence of geothermal resources based on available information.

RCL-3 These are areas within the resource area where the geologic environment, the inferred geologic processes, and the lack of geothermal resource occurrence would not indicate a potential for the presence of geothermal resources.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name K. Andersen Area Number (from GIS Theme) _____

Resource Minerals - Oil and Gas RCL (i.e., 1, 2 or 3) 1,2,3

Date 11-20-86

Description of Area (Species, number of acres, miles, etc.)

RCL-1: ___ areas of public land have been identified as having a moderate potential for the presence of oil and gas resources.
RCL-2: ___ acres of public land have been identified as having a low potential for the presence of oil and gas resources.
RCL-3: ___ acres of public land that have an unknown potential for oil and gas resources.

Rationale for RCL

RCL-1 These are areas of potential based on available information concerning geophysical interest, geology, the South Fork Development Contract, leasing interest and exploration drilling. Based on these factors and the presence of the only producable oil well in the resource area it is the area identified as having the best potential for oil and gas resources and therefore, the area needing the highest management priority.

RCL-2 These are areas within the resource area where potential for the presence of oil and gas resources, however, the information items identified in RCL-1 are not as prevalent in these areas.

RCL-3 These are areas within the resource area where the geologic environment, the inferred geologic processes, and the available inforamtion concerning the presence of oil and gas resources would not indicate a potential.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name K. Andersen Area Number (from GIS Theme) _____

Resource Minerals - Saleable RCL (i.e., 1, 2 or 3) 1,2,3

Date 11-20-86

Description of Area (Species, number of acres, miles, etc.)

The San Luis Valley has an abundant and diverse mineral material resource. The following lists the different types and acreage available by potential for each commodity:

	High	Moderate	Low
Sand & Gravel	acres	acres	acres
RipRap	acres	acres	acres
Dimension Stone	acres	acres	acres
Cinders	acres	acres	acres

Rationale for RCL

RCL-1 These areas are established on an as needed basis due to a specific resource need quite often in relation to a single use project (i.e., road surfacing, canal lining, or reservoir protection) or to meet the long term/small quantity needs of a particular user group. Potential for resource was established based on available information and location of resource in relation to population, transportation, and/or project sites. Use of a low potential site is quite likely to occur based on economic and site position as well as the resource potential present.

RCL-2 Same as RCL-1

RCL-3 Same as RCL-1

DATA THEMES

(MISSING)

Need a description of the GIS themes, how they can be used, what is the content, to include a listing of guads used.

REFERENCES

(MISSING)

CHAPTER 7

PALEONTOLOGICAL RESOURCES

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CHAPTER--7 PALEONTOLOGICAL RESOURCES

RESOURCE AREA PROFILE

Description

Most geologic formations in the resource area have produced fossils either within the vicinity or elsewhere in the region. The only overview/inventory of paleontolgical resources was contracted by Bureau of Land Management (BLM) with the Denver Museum of Natural History, (Lindsey 1983). This report emphasized both existing localities and the likelihood of additional fossil material being discovered in given locations. These resources were organized within a classification system based upon rarity of occurrence, depth of species/group study and scientific significance. The classifications are:

Class 1-a: Immediate detailed study follow-up is needed. Fossils of scientific interest are exposed to the surface, or are very likely to be discovered with detailed field work in the area. This classification is to be used for site-specific localities having scientifically significant fossils.

Class 1-b: Other areas having a high potential for scientifically significant fossils. In these areas, a paleontological evaluation will be done by the paleontologist on a case-by-case basis, prior to any surface-disturbing activities. These evaluations will change this classification to Class 1-a, Class 2, or Class 3, as appropriate.

Class 2: There is evidence of fossilization, but the presence of fossils of scientific value has not been established, and is not anticipated. Detailed study may be desirable in the future for the evaluation of all types of fossil collection. This classification may be used in identifying recreational values in fossils.

Class 3: Little likelihood of finding fossils of scientific use. No further considerations of fossils necessary unless future discoveries require a change of classification.

To date, no paleontologic properties have been formally evaluated for status within the National Natural Landmark System.

Condition and Trend

Generally, paleontologic properties are subject to natural erosion, systematic scientific collecting, commercial collecting, recreational "fossil hunting", and other destructive activities such as mineral exploration. The general trend is gradual deterioration. However, natural erosional factors may be synchronous with geologic processes that place there factors beyond the scope of planning needs.

EXISTING MANAGEMENT SITUATION

Current Management

Present BLM policy is based primarily upon the Antiquit its, Law of 1906 requiring protection primarily of vertebrate fossils. This has been achieved through a permitting system somewhat similar to that for archaeological resources. Nonvertebrate resources are monitored through a commercial permit system or through a recreational collecting system designated by management.

Supply - Demand Analysis and Dependency

Paleontolgic resources can be both scientific and commercial commodities but are limited in the since that available resources are finite. At the present time, virtually the only demand is the scientific study of pliestocene fauna in association with archaeological materials.

CAPABILITY ANALYSIS

The following forms describe the definition of the capability resource levels (RCLS), the management practices to be applied to each particular RCL, and specific site(s) within each RCL.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Paleontolgy Specialist Name J. Beardsley

Date _____

Resource Capability Level 1 (define the highest priority for management)

Paleontologic sites which qualify for inclusion within the National Natural Landmark System. This would be from Class 1-a and Class 1-b.

Resource Capability Level 2 (define the second highest priority for management)

Those sites which exhibit scientific value or potential according to the Antiquit Act of 1906 or as otherwise determined by the scientific community. This is also Class 1-a and 1-b resources.

Resource Capability Level 3 (define the third highest priority for management)

Commercial, Recreational, Educational use of resources, Class 2.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Paleontology

Specialist Name J. Beardsley Date 2-3-87

Describe the types of management that you would use in RCL 1 areas

Identify the site/area protect the site/area through management practices including: fencing, closure, signing, interpretation, etc. Provide research, education, and recreation opportunities consistent with Natural Landmark Status.

Describe the types of management you would use in RCL 2 areas

Provide protection of vertebrate sites in the same manner as RCL 1. Scientific value and noncommetant protection of nonvertebrate locations may be determined in consultation with the scientific community.

Describe the types of management you would use in RCL 3 areas

Resolution and monitoring can be through a permitting system to include commercial collection, recreational collecting, local museums, and schools.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name J. Beardsley Area Number (from GIS Theme) PAL

Resource Paleontology RCL (i.e., 1, 2 or 3) RCL 1

Date 2-3-87

Description of Area (Species, number of acres, miles, etc.)

No areas are currently known.

Rationale for RCL

Identification of landmarks one mandated as part of the National Heritage.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name J. Beardsley Area Number (from GIS Theme) PAL

Resource Paleontology RCL (i.e., 1, 2 or 3) RCL 2

Date 2-3-87

Description of Area (Species, number of acres, miles, etc.)

Pleistocene - Pliacene - Quaternary
Hansen's Bluff, Great Sand Dune Area

Rationale for RCL

Areas of ongoing scientific research.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name J. Beardsley Area Number (from GIS Theme) PAL

Resource Paleontology RCL (i.e., 1, 2 or 3) RCL 3

Date 2-3-87

Description of Area (Species, number of acres, miles, etc.)

Kerber Creek, Droz Creek
Nonvertebrate Resources

Rationale for RCL

Class 2 public collecting potential.

DATA THEMES

(MISSING)

Need a description of the GIS themes, how they can be used, what is the content, to include a listing of guads used.

REFERENCES

1983 Lindsey, Don K., Paleontological Inventory and Assessment of the San Luis Resource Area. Report submitted to the Bureau of Land Management, Canon City, Colorado.

(NEED: a record of discussion with SHP, Universities, etc.)

CHAPTER 8

VEGETATION

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CHAPTER 8--VEGETATION

RESOURCE AREA PROFILE (RAP)

Description

There are thirteen vegetative types in the San Luis Resource Area (SLRA). The classification is based on vegetative aspect and may or may not reflect the dominant species where shrubby species occur. For example rabbitbrush may be only 15 percent of the total vegetation of the type, but is classified as a half shrub type based on occular estimates of the composition and does not reflect total pounds produced. Table 8-1 lists acres, percent of public lands, and condition of each type.

Half Shrub

Half shrub is the predominant vegetative type and is present over the entire resource area and at all elevations. The type includes snakeweed (Guterrezia sarothral) and low rabbitbrush (Chrysothennus greenie). The predominant grass species associated with this type are bluegrama (Bouteloua gracilis), ring muhly (Muhlenbergia torreyi), and Indian ricegrass (Oryzopsis hymenoides).

TABLE 8-1

SUMMATION OF ACRES, PERCENT NRL, AND CONDITION OF 13 VEGETATIVE TYPES IN THE SAN LUIS RESOURCE AREA

Vegetative Type	Acres	Percent of Total NRL	Condition (acres)		
			Poor	Fair	Good
Grassland	124,030	24.0	35,433	79,915	8,682
Meadow	1,150	0.2	172	748	230
Sagebrush	15,740	3.1	10,540	5,200	0
Mountain shrub	3,471	0.7	0	694	2,777
Conifer	47,683	9.2	3,335	18,335	26,013
Rock Outcrop	2,629	0.5	1,200	1,429	0
Pinon-Juniper	99,522	19.3	10,750	65,732	23,040
Broadleaf trees	1,643	0.3	0	500	1,143
Saltbush	2,054	0.4	900	1,154	0
Greasewood	15,867	3.1	8,067	7,800	0
Winterfat	3,421	0.7	1,368	2,053	0
Half shrub	191,750	37.1	118,391	63,801	9,558
Annuals	7,411	1.4	4,817	2,594	0
Total	516,371	100.0	194,973	249,955	71,443
Percent		100	38	48	14

SOURCE: 1978 San Luis Grazing EIS (Page II-S6)

Grass

Grass is the second most common vegetative type found. Blue grama is the predominate species and is throughout the resource area. Species occurring in lesser amounts include western wheatgrass (Agrapyron smithii, needle-and-thread (Stipa comata), squirreltail (Sitanion hystrix), and red threeawn (Aristlda longiseta), and ring muhly. At higher elevations (above 9,000 feet) Arizona fescue (Festuca arizonica) and mountain muhly (Muhlenbergia montana) occurs along with other cool season species.

Pinon-Juniper

This type occurs in the foothill areas immediately below the conifer types. Colorado pinon pine (Pinus edulis) and Utah juniper (Juniperus osteosperma) are the major species with an understory of grasses and shrubs. The dominate grass is bluegrama. Other grasses associated with this type are Indian ricegrass, squirreltail, red threeawn and Scribneri needle-grass (Stipa scribneri).

Conifer

The conifer type is at the higher elevations and includes mostly Douglas fir (Pseudotsuga menziesii) and ponderosa pine (Pinus ponderosa). Ponderosa pine occurs in open stands supporting understory grasses of Arizona fescue and mountain muhly, along with various shrubs and forbs. Other conifer types occur on steep slopes in dense stands with little understory production.

Broadleaf

The broadleaf type is dominated by aspen (populus tremula tremaloides) but includes small areas of narrow leaf cottonwood (populus angustifolia). Aspen occurs as small islands within the conifer type and generally supports an understory of grasses, shrubs, and forbs. The cottonwood subtypes are often associated with streams and springs and support an understory of grasses, shrubs, and forbs.

Sagebrush

The sagebrush type is a relatively small percentage of the total vegetation of the resource area. The sagebrush types are only found at the extreme south end of the area southwest of Antonito, the extreme north end of the area above Villa Grove, and on top of the San Luis hills. The brush species is big sagebrush (Artemisia tridentata)

Greasewood

The greasewood types are located on areas in which there are high concentration of salts due to poor drainage. Small amounts of saltbush (Atriplex canescens) and rabbitbrush are sometimes intermingled with the greasewood (Sarcobatus vermiculatus). Understory vegetation is mostly saltgrass (Distichlis stricta).

Winterfat

Only a small portion of the area is covered by winterfat type (Eurotia lanata). It occurs at lower elevations growing on high (8 to 10) pH soils. Understory grasses include blue grama, western wheatgrass, and Indian grass.

Mountain Shrub

The mountain shrub type represents a very small but important part of the vegetation. It occurs on the lower mountain slopes and foothills mostly in the northeastern portion of the area. Predominant species include Gambel oak brush (Quercus gambelii), skunk bush (Rhus trilobata), with small amounts of currant (Ribes spp.), a small area of mountain mahogany (Cercocarps montanus) is scattered over the entire areas.

Saltbush

The saltbush type constitutes a very small part of the vegetative types and is commonly found in scattered patches within the winterfat and half shrub types at the lower elevations.

Meadow (Wet)

The meadow (wet) type is included in the riparian zones and will be discussed in more detail in Chapter 9.

Rock Outcrop

The rock outcrop type includes extremely rocky, steep land or other land that is incapable of supporting vegetative cover.

Condition and Trend

Range condition (good, fair, and poor) is used to describe the condition of the vegetative types in the resource area. Table 8-2 summarizes conditions by vegetative type and vegetative condition by allotment. The method used to determine range condition is a combination of the Phase I watershed inventory (completed in 1975) and classification of plants species as desirable, intermediate, and least desirable. Composition and plant species were taken from the 1958-1959 and 1960-1961 occular reconnaissance survey. The following information describes the categories of range conditions.

1. Good Condition: Composition is 40 percent or more of both desirable and intermediate species with at least 20 percent made up of desirable species. Erosion condition class is slight to stable.

2. Fair Condition: Composition is 15 to 39 percent of desirable and intermediate species with 5 or more percent made up of desirable species. Erosion condition class is less than critical. Also, ecosystems where 60 percent or more of intermediate species and less than 5 percent desirable species are present will be rated fair condition when the erosion condition class is moderate to stable.

3. Poor Condition: Composition is less than 15 percent desirable and intermediate species. Erosion condition class is critical to severe. (It should be noted that if the erosion condition class is severe to critical, the site is rated in poor condition regardless of the plant composition.)

Apparent trend is used to indicate the direction of change in range condition. Three categories are used to indicate apparent trend (upward, static, and declining). The general vegetative trend of each allotment is shown on Table 8-2. Conditions of the allotment are also shown on this table.

In general the acreage not listed in Table 8-2 have a stable to upward trend.

Threatened and Endangered (T&E) Species

There are no threatened and endangered plant species (T&EPS) in the SLRA. There is an extensive list of Sensitive Plant Species (SENPS) that have been reported or suspected. A short list of verified SENPS and their mapped locations has been provided by the Colorado Natural Areas Program (CNAP).

Several Sensitive Plant Association (SENPA) have been identified by CNAP. A map has been provided showing their locations. There is also a tentative list and location of Sensitive Floristic Communities (SENFC) identified by CNAP but is not included in their final report. However, a map was provided by CNAP showing the location of some known communities.

The following list describes the 4 catagories mentioned above:

Category	Definition
T&EPS	A plant species that is listed Federally and must be protected by law.
SENPS	A plant species being considered to be listed Federally or listed by the state of Colorado as sensitive species or listed by the BLM Colorado State Office if it meets the criteria found in Instruction Memorandum CO-87-104.
SENPA	Plant associations that are listed by the stae of Colorado as sensitive. There are none listed by BLM at this point.
SENFC	These are floristic communities that are disjunct populations of endemic species or communities with wide diversity of species that can yield important data e.g. Potential natural community determinations. These sitess are identified as areas and not by species or plant associations.

Refer to the TEP Theme for locations and size.

TABLE 8-2

VEGETATIVE CONDITION CLASSES AND TRENDS FOR AMPs
IN THE SAN LUIS RESOURCE AREA

Management Unit (AMPs)		Total Area (Acres)	Vegetative Condition Classes			Vegetative Condition Trend
			Good 1/ (Acres)	Fair 1/ (Acres)	Poor 1/ (Acres)	
4501	Poncha Pass West	1,925	1,875	50	0	S
4505	Poncha Pass East	2,160	2,160	0	0	U
4506	East Side	10,013	4,710	5,303	0	U
4510	Turquoise Gulch	3,806	3,746	60	0	U
4513	Kelly Creek	6,699	900	4,699	1,100	U
4514	Kerber Creek	4,500	4,500	0	0	S
4517	Noland Gulch	7,650	4,050	3,600	0	U
4523	East San Luis Creek	1,220	0	1,220	0	S
4519	West San Luis Creek	1,520	0	1,520	0	S
4521	Piney Creek	2,510	1,910	600	0	S
4522	Steel Canyon	4,472	3,822	650	0	U
4524	Mirage	2,395	80	2,315	0	S
4527	Valley View Hot Springs	4,927	640	4,287	0	U
4530	Cotton Creek	3,880	0	3,880	0	S
4315	Dry Gulch	835	0	835	0	S
4531	Stonehouse	3,840	0	3,840	0	S
4532	Crow	2,000	0	2,000	0	S
4533	Cooper Butte	4,420	1,000	3,420	0	S
34	McIntyre Gulch	4,602	0	4,402	200	U
36	Findley Gulch	8,115	0	3,270	4,845	U
4535	Cottonwood	3,230	0	2,030	1,200	U
4540	Dry Gulch	4,823	0	4,623	200	S
4560	Laughlin	1,820	0	1,820	0	S
4541	Porson Gulch	12,898	0	12,898	0	S
4558	E. Hoagland Hill	1,459	0	1,459	0	S
4545	Cross Creek	6,305	2,500	2,605	1,200	U
4546	Trickle Mountain	19,562	2,700	14,962	1,900	S
4547	Sheep Creek	2,031	1,031	1,000	0	U
4548	Taylor Canyon	2,902	0	200	2,702	U
4550	Rabbit Canyon	3,835	0	3,335	500	U
4551	Saguache Park	1,920	0	1,000	920	S
4552	Hat Springs	4,564	0	4,564	0	S
4554	Robb Ranch	1,488	0	1,488	0	S
4557	Hoagland Hill	4,167	0	4,107	60	S
4562	Mitchell	938	0	40	898	U
4563	West Tracy Ridge	925	0	0	925	U
4566	Tracy Cattlemen's	27,749	5,140	15,709	6,900	U

1/ Depicts the vegetative condition of the area (in acres) of each AMP.

2/ Trend: U - Upward
S - Static

TABLE 8-2 (Cont'd)

VEGETATIVE CONDITION CLASSES AND TRENDS FOR AMPs
IN THE SAN LUIS RESOURCE AREA

Management Unit (AMPs)		Total Area (Acres)	Vegetative Condition Classes			Vegetative Condition Trend
			Good 1/ (Acres)	Fair 1/ (Acres)	Poor 1/ (Acres)	
4565	Tracy Individual	1,676	960	716	0	S
4567	Biedell Creek	2,462	1,500	962	0	U
4568	East of Carnero Creek	11,849	2,700	6,649	2,500	S
4569	Upper Coolbroth	1,780	1,780	0	0	S
4570	Lower Coolbroth	605	605	0	0	S
4571	Carnero Creek	2,318	2,318	0	0	U
4572	La Garita	1,082	1,082	0	0	U
4574	Rio Grande Canal	4,360	0	4,360	0	S
4307	Alder Creek	275	275	0	0	U
4305	Sanderson	510	510	0	0	S
4304	Bowen	488	0	0	488	U
4402	Pup Peak	5,002	0	0	5,002	S
4401	Limekiln	5,050	0	0	5,050	S
4403	Nicomodes	2,120	0	0	2,210	?
4404	Refuge	1,280	0	560	720	?
4405	Raton Creek	3,940	0	1,200	2,740	S
4406	Rock Creek	12,680	840	9,840	2,000	S
4201	McMahon	15,016	1,500	2,560	10,956	S
12	Greenie Mountain	7,794	400	4,000	3,394	S
11	Gato-Hutchinson	1,960	0	520	1,440	S
4410	Triangle	3,715	0	1,840	1,875	S
4216	Jadero Flat	5,200	0	2,900	2,300	U
4206	Poso Creek	2,240	0	100	2,140	S
4207	Capulin	3,992	0	3,192	800	U
4219	Romero Canyon	1,713	0	1,730	0	S
4220	Ra Jadero Canyon	6,730	0	5,430	1,300	S
4213	Garambuyo	7,683	0	3,000	4683	?
4214	Trujillo	5,168	0	840	4,328	?
4210	Crossroad	3,198	0	0	3,198	?
4211	Gosline	960	0	0	960	?
4212	Ciscom Flat	3,680	0	0	3,680	U
4227	La Jara Creek	820	0	820	0	U
4222	Little Mogotes	13,510	0	6,110	7,400	U
4226	Grande	3,950	0	2,850	1,100	S
4225	Mogote Flat	1,977	0	1,977	0	S
4224	Poso	5,240	0	800	4,440	U
4229	Los Mogotes	7,514	0	640	6,874	S
4234	Big Horn Creek	760	0	0	760	S
4235	Railroad	3,741	0	0	3,741	S

1/ Depicts the vegetative condition of the area (in acres) of each AMP.

2/ Trend: U - Upward
S - Static

TABLE 8-2 (Cont'd)

VEGETATIVE CONDITION CLASSES AND TRENDS FOR AMPs
IN THE SAN LUIS RESOURCE AREA

Management Unit (AMPs)		Total Area (Acres)	Vegetative Condition Classes			Vegetative Condition Trend
			Good 1/ (Acres)	Fair 1/ (Acres)	Poor 1/ (Acres)	
4236	Llano	5,261	0	0	5,261	U
4239	San Antonio	4,850	0	2,505	2,345	S
4240	Alta Lake	5,192	0	5,192	0	S
4242	Twin Lakes	8,153	0	7,253	900	U
4249	Pinon	7,210	0	4,650	2,560	S
4248	Kiowa Hills	4,302	0	300	4,002	U
4250	Eight Mile	5,640	0	0	960	S
4249	Pinon Hills	9,274	0	0	9,274	S
4251	Mesa Common	4,976	0	0	4,976	S
4252	San Luis Hills	2,542	0	0	2,542	S
4253	Flat Top	7,440	0	2,600	4,840	S
4254	Farry Hills	747	0	0	747	S
4256	East Bend	2,760	0	0	2,760	S
4255	La Sauses	3,200	0	0	3,200	S
4117	Tobin Creek	6,126	0	1,600	4,526	S
4107	Foothills	4,700	0	1,440	3,560	U
4113	Blanca/Four Mile	5,540	0	5,540	0	U
4102	Lakes	2,240	0	0	2,240	U
03	Dry Lakes	3,680	0	0	3,680	U
20	Zapata Falls	5,991	0	4,351	1,640	S
4542	Tuttle Creek	1,169	0	1,169	0	U

1/ Depicts the vegetative condition of the area (in acres) of each AMP.

2/ Trend: U - Upward
S - Static

EXISTING MANAGEMENT SITUATION (EMS)

Current Management

Refer to Chapter 10 - Livestock Grazing for the current management of the vegetation.

SUPPLY-DEMAND ANALYSIS

Refer to Chapter 10 - Livestock Grazing for the Supply-Demand Analysis.

CAPABILITY ANALYSIS (CA)

The following forms describe the definition of the capability resource levels (RCL's), the management practices to be applied to each particular RCL, and give the specific site(s) that fall within each RCL.

SLRMP MSA

CAPABILITY ANALYSIS FORM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Vegetation Specialist Name Royce Wheeler

Date 2-23-87

Resource Capability Level 1 (define the highest priority for management)

Areas in SLRA where monitoring shows that sensitive plants and associations are being damaged as a result of grazing.

Resource Capability Level 2 (define the second highest priority for management)

Areas in SLRA where vegetation production are less than demand or production is more than demand. (By livestock or wildlife)

See Table 8-3

Resource Capability Level 3 (define the third highest priority for management)

All other remaining areas.

SLRMP MSA

CAPABILITY ANALYSIS FORM 2

MANAGEMENT PRACTICES

Resource Name Vegetation

Specialist Name Royce Wheeler Date 2-23-87

Describe the types of management that you would use in RCL 1 areas

Special protection from excessive or damaging browsing or grazing to protect T&E species.

Restrict or eliminate grazing on those areas that monitoring shows damage or decline in numbers of plants or downward trend in the associations.

Describe the types of management you would use in RCL 2 areas

Increase or decrease browsing or grazing on areas based on demand levels.

See Table 8-3

Describe the types of management you would use in RCL 3 areas

Maintain browsing or grazing of these areas.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Royce Wheeler Area Number (from GIS Theme) VEG

Resource Vegetation RCL (i.e., 1, 2 or 3) 1

Date 2-23-87

Description of Area (Species, number of acres, miles, etc.)

Data gathering not completed - monitoring will be implemented and repeated when necessary. Specific monitoring procedures have not been developed.

Rationale for RCL

To prevent the loss of the listed sensitive plant species and sensitive plant associations.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Royce Wheeler Area Number (from GIS Theme) VEG

Resource Vegetation RCL (i.e., 1, 2 or 3) 2

Date 2-23-87

Description of Area (Species, number of acres, miles, etc.)

All areas where changes need to occur in grazing or browsing.

See Table 8-3

Rationale for RCL

To bring production levels in line with use.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Royce Wheeler Area Number (from GIS Theme) VEG

Resource Vegetation RCL (i.e., 1, 2 or 3) 3

Date 2-23-87

Description of Area (Species, number of acres, miles, etc.)

All other areas in the resource area with no particular vegetation problems.

Rationale for RCL

No changes needed.

DATA THEMES

The following attributes are used to describe the Vegetative (VEG) theme.

1/	2/	3/
1	-	Bogr, Eula, CHRY

1/ Vegetative Type
- 1 - Grass
- 2 - Meadow
- 3 - Perennial forbs
- 4 - Sagebrush
- 5 - Mountain shrub
- 6 - Conifer
- 7 - Rock Outcrop
- 8 - Barren
- 9 - Pinon-juniper
- 10 - Broad leaf trees
- 11 - Creosote bush
- 12 - Mesquite
- 13 - Saltbush
- 14 - Greasewood
- 15 - Winterfat
- 16 - Desert shrub
- 17 - Half shrub
- 18 - Annuals
- 19 - Cropland

2/ Separator

3/ The most dominate or important vegetative species using the standard 4 letter plant symbol (scientific name) found in the Common Colorado Range Plants publication, 1980, Soil Conservation Service. There can be 1,2 or 3 species listed.

The following attributes are used to describe the Threatened and Endangered Plants (TEP) theme.

1/	2/	3/	4/	5/
SENSP	/	NELI	?	NMP

1/ Category Classification
- TEFPS - Threatened and Endangered Federal Plant Species
- SENPS - Sensitive Plant Species
- SENPA - Sensitive Plant Association
- SENFC - Sensitive Floristic Community

2/ Separator

3/ Plant Species
- NELI - Neoparrya lithophilii
- ASRI - Astragolus ripleyi
- CLMU - Cleome multicaulis

Plant Association
- 1P - PIPO (PSME) / FEAR2 / MUMO
- 2P - PIAR (PIPO) (PSME) / FEAR2 / MUMO
- 3P - MUFI
- 4P - FEAR1 / MUFI
- 5P - FEAR2 / MUMO
- 6P - CELA / ORHY

Floustic Communities
- 1F - Flattop Mesa
- 2F - Grande Mogote Peaks
- 3F - Little Mogote Mesa
- 4F - South Pinon Hills
- 5F - Pinon Hills

4/ Separator

5/ Management Plan Status
- MP - Existing Management Plan
- NMP - No Management Plan

REFERENCES

1. San Luis Resource Area Final Grazing Environmental Statement May, 1978.

2. San Luis Resource Area Range Management Program Document September, 1978.

3. San Luis Resource Area Rangeland Program Summary Update May, 1985.

CHAPTER 9

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CHAPTER 9--RIPARIAN VEGETATION

RESOURCE AREA PROFILE

Description

The San Luis Resource Area (SLRA) contains approximately _____ acres of riparian vegetation, which is _____ percent of the total acres in the resource area. This vegetative type occurs adjacent to perennial streams, some intermittent streams, reservoirs, ponds, and springs. The perennial streams encompass the majority of this acreage, and most of these streams are in the northern half of the resource area.

The GIS theme for riparian vegetation is labeled RIP. This theme was created by putting a buffer zone around those areas that support riparian vegetation.

The type and extent of riparian vegetation adjacent to streams, both perennial and some intermittent, are dependent on a number of interacting factors. These include stream width, depth, and flow rate, soil type, topography, and the management practices applied, such as timber harvesting, road building, and grazing.

The Rio Grande River is by far the largest of these perennial waterways and forms the southeastern boundary of the resource area. The majority of, the remainder of perennial streams are found northeast and northwest of Saguache. Private lands interspersed with public lands make management of some streams difficult. An example of this is the Rio Grande River, which has some public lands on the west side but is strictly private on the east side.

Riparian areas associated with the _____known springs in the resource area contribute a minor portion to the total riparian acreage. The primary factor that determines the extent of riparian vegetation associated with each spring is the flow rate. Those springs with higher flow rates will support more riparian vegetation, subject to topography and soil type.

Reservoirs and ponds, both manmade and natural, are another source of riparian vegetation. The most important factor influencing the associated plant community is water fluctuation (Crouse and Kindschy, 1984). Those reservoirs with little variation in water level will support the most dense and diverse riparian zones (Crouse and Kindschy, 1984). Manmade reservoirs constructed for the purposes of improving watersheds and watering livestock are scattered throughout the resource area. Those manmade reservoirs which do not hold water yearlong are generally not capable of sustaining riparian vegetation. Manmade reservoirs constructed for the purposes of watering livestock and improving watersheds are scattered throughout the resource area.

There are many ponds in the resource area which support riparian vegetation and provide important wildlife habitat. An example is the Blanca Wildlife Habitat Area (BWHA), which contains some 1,400 acres of ponds and riparian vegetation, and is an important waterfowl production area. Other areas, such as the Dry Lakes north of BWHA, have potential for wetlands development and could produce some riparian communities in the future. Table 9-1 provides a current inventory of riparian acreages associated with ponds.

TABLE 9-1

Riparian Acres - Ponds

Area	Acres Riparian
Blanca Wildlife Habitat Area	
Flat Top	
Mishak Lakes	
Dry Lakes	
Mumm Well Pond	

Condition and Trend

The condition and trend of a number of selected perennial streams was analyzed in the San Luis Grazing EIS (see Table 9-2). These streams were rated using the criteria shown in Table 9-3.

Monitoring conducted since completion of the EIS has resulted in some changes in condition and trend on the above streams. Other perennial streams have been added to the list as a result of later inventories.

There are still _____ miles of perennial streams which have had no riparian vegetation inventory. These streams should be inventoried and monitored in the future so that progress towards achieving riparian objectives can be evaluated.

No intermittent streams have been inventoried to date. As riparian vegetation management receives more recognition in public land management programs, it is likely that some funding will be directed for this type of inventory.

TABLE 9-2
RIPARIAN CONDITION AND TREND ON SELECTED PERENNIAL
STREAMS IN THE SAN LUIS VALLEY

Stream Name	Stream Miles	Riparian Community	Riparian Stability
Lower Ford Creek	1.5	Poor	Declining
Middle Ford Creek	0.5	Good	Declining
Upper Ford Creek	1.0	Good	Improving
Baxter Creek	1.5	Fair	Declining
Lower Tuttle Creek	1.0	Excellent	Stable
Upper Tuttle Creek	1.0	Poor	Improving
Lower Sheep Creek	0.3	Good	Improving
Upper Sheep Creek	1.7	Excellent	Stable
Hat Springs Creek	1.8	Fair	Declining
Cross Creek	0.5	Good	Stable
Kerber Creek	0.5	Poor	Declining
Alder Creek	0.4	Good	Stable
Fisher Creek (Head of San Luis Creek)	0.5	Poor	Stable
Upper Garner Creek	0.3	Good	Stable
Rito Alto Creek	0.3	Excellent	Stable
Black Canyon Creek	0.8	Excellent	Stable
Quarry Creek	0.3	Excellent	Stable
Upper Raspberry Creek	0.5	Excellent	Stable
Lower Raspberry Creek	0.5	Fair	Stable
Eaglebrook Gulch	0.6	Fair	Declining
Saguache Creek	0.3	Excellent	Stable
Spanish Creek	0.3	Excellent	Stable
Rock Creek	0.2	Excellent	Stable
Middle San Luis Creek	0.4	Poor	Stable
Upper San Luis Creek	0.6	Good	Stable
Dorsey Creek	0.5	Good	Improving
Middle Garner Creek	0.3	Good	Stable
Lower Garner Creek	1.7	Fair	Improving
Cotton Creek	0.8	Good	Stable
Rio Grande (A)	7.0	Poor	Stable
Rio Grande (B)	5.0	Good	Stable
La Jara Creek	2.5	Good	Improving
Alamosa River	2.0	Good	Stable
Total	37.1		

TABLE 9-3
CLASSIFICATION SYSTEM FOR RIPARIAN
COMMUNITIES IN THE SAN LUIS VALLEY

CONDITION CLASS	DEFINITION OF CLASS
Excellent	Diversity and abundance of typical riparian plants (trees, shrubs, forbs, grasses, etc.) and animals (mammals, birds, amphibians, invertebrates, etc.) good. Good age distribution, reproduction evident. Soil mostly covered with vegetation, bank erosion generally lacking. Cover for animals abundant. Vegetation shades water most of the day.
Good	Most groups of typically riparian plants (trees, shrubs, forbs, grasses, etc.) and animals (mammals, birds, amphibians, invertebrates, etc.) present at or near stream border, but numbers may be reduced. Age diversity fair, reproduction evident. Some bare soil areas noticeable, but erosion at low levels. Riparian animals somewhat reduced or typical species missing due to cover loss.
Fair	Many of the typically riparian plants (trees, shrubs, forbs, grasses, etc.) and animals (mammals, birds amphibians, invertebrates, etc.) rare or missing from steam border. Age diversity lacking, little sign of reproduction. bare soil may be common. Animal populations greatly reduced from lack of cover; may only be transitory in the community. Vegetative shade on stream lacking or only during morning and evening hours.
Poor	Typically riparian plants and animals scanty or lacking in both numbers and diversity. Little age variation, no sign of reproduction. Range plants (i.e., rabbitbrush, sagebrush, etc.) abundant down to water edge. Erosion of bare soil normally high, but may be reduced in monotypic grass communities that provide good ground cover but little diversity or animal cover. No shade on water from vegetation.

A detailed survey of riparian condition and trend specifically for springs and reservoirs has not been conducted. However, springs with potential for development have, for the most part, been developed and fenced. Since livestock have been excluded from these fenced springs, it can be reasoned that trend is stable or improving. Condition and trend of those springs which are undeveloped and/or unfenced is determined by the amount of livestock use.

Table 9-4 shows current status of springs regarding development and fencing. As indicated, some of those shown as undeveloped have potential for development in the future. This list of springs was taken from the water sources (WRS) GIS theme.

TABLE 9-4
SPRING DEVELOPMENT STATUS

Spring Name	Developed?	Fenced?

* Indicates potential for development.

Table 9-5 lists the reservoirs (e.g., check dams) in the resource area that hold water yearlong and are capable of sustaining riparian vegetation.

Condition and trend of reservoirs, like springs, is determined in general by the amount of livestock use. Therefore, Table 9-5 also shows accessibility of these reservoirs to livestock.

It should be noted here that Terrace Reservoir will not be included in this table. Even though it holds water yearlong, the annual fluctuation in water level is such that it precludes a riparian community from becoming established.

TABLE 9-5

RESERVOIRS WITH RIPARIAN VEGETATION

Reservoir, Name	Riparian Acreage	Accessible to Livestock?

EXISTING MANAGEMENT SITUATION

Current Management

The importance of riparian areas has only recently received much attention in the overall management of public lands. Historically, riparian areas have not been managed directly, but have received impacts as a consequence of other resource use practices. Examples include grazing management plans and maintenance or improvement of wildlife habitat by fencing riparian areas.

Livestock grazing, timber harvesting, and road building are the most important resource activities that affect riparian areas. There are currently 60 operational allotment management plans (AMPs) with some type of grazing strategy. In those allotments where water is provided by riparian sources, grazing strategies dictate the season of use and duration of grazing in the riparian areas. These areas are preferred by livestock and, therefore, typically receive heavy to severe grazing use. Grazing systems can affect riparian management by: (1) deferring seasons of use, (2) controlling livestock numbers, (3) allowing rest from grazing, and (4) dictating the type of livestock.

In order to discourage livestock from over grazing the riparian areas, several management tools have been applied. Many springs and some streams have been fenced to keep livestock out, which allows an area to stabilize so that wildlife habitat is maintained or improved. Riparian enclosures have been constructed on Garner Creek, Ford Creek (3 total), the Rio grande (3 total), and San Luis Creek.

The proper use of SP and mineral supplements can encourage livestock to spend less time in riparian areas. Salting stipulations are written into some AMPs, but compliance is essentially voluntary and, therefore, these stipulations are not very effective.

Some lands within the resource area have been eliminated from grazing or are unalloted. Riparian areas within these lands (Table 9-6) benefit by having no livestock use.

The ponds included in the Blanca Wildlife Habitat Area are managed for waterfowl production and fishing. Riparian acreages will increase in this area when and if funds become available for further development.

Supply-Demand Analysis and Dependency

The demand for riparian vegetation is derived mainly from three resource activities: livestock grazing, recreation, and fisheries/wildlife habitat management. The supply is dynamic, and it responds to management practices as well as natural forces and events. As more emphasis is directed towards the management of riparian areas, it is likely that management strategies will increase both the quantity and quality of these vegetative communities.

Livestock demands for forage produced in riparian areas is high. Utilization on these areas is typically much heavier than adjacent upland areas. This occurs because the animals can meet the basic needs of food, water, and cover without having to travel very far. Normally, cattle will move off riparian areas to graze only after the supply of forage is exhausted. A recent study by Krugeger (1984) showed that although riparian areas made up only 2-3 percent of a pasture, they produced 20 percent of the forage.

Riparian areas support a wide diversity of recreation opportunities including fishing, hiking, rafting, camping, and picnicking. Indeed, almost all campgrounds and picnic areas are located along streams or lakes. Although there is no demand for the vegetation itself, the unique habitats which have evolved certainly attract all types of users. It follows, then, that enhancement of the vegetation (e.g., provide more cover for fish) would afford more potential recreation opportunities.

Wildlife and fisheries demands on riparian vegetation are more closely tied to the cover which the vegetation provides. These demands are discussed adequately in Chapter 11 (Wildlife Habitat) of this document and will not be repeated here.

TABLE 9-6
RIPARIAN SOURCES WITHIN E/G OR UNALLOTED

Source Name	Elimination of Grazing (E/G) or Unalloted (U)

CAPABILITY ANALYSIS

The following forms describe the definition of the capability resource levels (RCLs) the management practices to be applied to each particular RCL, and specific site(s) within each RCL.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Riparian Vegetation Specialist Name Fran Ackley

Date _____

Resource Capability Level 1 (define the highest priority for management)

Poor condition riparian streams on public lands.

Developed, unfenced springs accessible to livestock and undeveloped springs targeted for development.

Ponds, and reservoirs that are, accessible to livestock, in critical wildlife ranges, and in poor condition.

Resource Capability Level 2 (define the second highest priority for management)

Fair condition riparian streams on public lands.

Developed springs where fencing is inadequate, i.e. area fenced is too small, and undeveloped springs accessible to livestock.

Ponds, and reservoirs, accessible to livestock and in fair condition.

Resource Capability Level 3 (define the third highest priority for management)

Good condition riparian streams on public lands.

Undeveloped springs not proposed for development and not accessible to livestock.

Ponds and reservoirs not accessible to livestock.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Riparian Vegetation

Specialist Name Fran Ackley Date _____

Describe the types of management that you would use in RCL 1 areas

Streams - 1) Change season and/or duration of livestock use.
2) Incorporate riparian pasture into allotment management plan.
3) Fence stream corridor and plant and/or seed riparian species.
4) Change type of livestock.
5) Eliminate grazing.

Springs - Fence springs to include riparian vegetation and leave water at the source for wildlife.

Ponds and reservoirs - Pipe water to a trough below water source and fence riparian vegetation.

Describe the types of management you would use in RCL 2 areas

Streams - 1) Change season and/or duration of livestock use.
2) Incorporate riparian pasture into allotment management plan.
3) Eliminate grazing temporarily and develop a management plan for livestock use.

Springs - 1) Enlarge enclosures to include all riparian vegetation.
2) Fence undeveloped springs accessible to livestock.

Ponds and reservoirs - Fence riparian vegetation and include a water gap in the fence for livestock and wildlife.

Describe the types of management you would use in RCL 3 areas

Streams - Monitor for condition and trend.

Springs - Monitor for condition and trend.

Ponds and reservoirs - Monitor for condition and trend.

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CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Francis Ackley Area Number (from GIS Theme) _____

Resource Riparian Vegetation RCL (i.e., 1, 2 or 3) 1

Date _____

Description of Area (Species, number of acres, miles, etc.)

(DATA GATHERING NOT COMPLETED)

Rationale for RCL

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Francis Ackley Area Number (from GIS Theme) _____

Resource Riparian Vegetation RCL (i.e., 1, 2 or 3) 2

Date _____

Description of Area (Species, number of acres, miles, etc.)

(DATA GATHERING NOT COMPLETED)

Rationale for RCL

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Francis Ackley Area Number (from GIS Theme) _____

Resource Riparian Vegetation RCL (i.e., 1, 2 or 3) 3

Date _____

Description of Area (Species, number of acres, miles, etc.)

(DATA GATHERING NOT COMPLETED)

Rationale for RCL

DATA THEMES

The GIS theme for riparian vegetation was created by manipulating several already existing themes. Riparian acreages for perennial streams were calculated by adding a 50 meter buffer zone on each side of the streams shown in the surface water streams theme. This 50 meter figure was adjusted upward or downward where necessary to account for topographical variations. Intermittent streams with potential for restoration to perennial status were added to the SWS theme.

The Surface Water Lakes (SWL) and ponds theme was used to determine riparian acreage associated with lakes, ponds, and reservoirs. A buffer zone of 100 meters in diameter was drawn around each source capable of sustaining riparian vegetation. Those sources which hold water yearlong were determined to be capable.

The Water Projects (WTP) theme was used as the base source of information for springs. All springs in the resource area were geocopied from this theme onto the RIP theme.

REFERENCES

- SLRA GRazing Mgmt. Environmental Statement

- BLM Draft Riparian Policy

- BLM Supplemental Program Guidance

Crouse, Michael R. and Kindschy, Robert R. 1984.

A Method for Predicting Riparian Vegetation

Potential of Semiarid Rangelands. In: Proceedings, 1984 Pacific Northwest Range Management Short Course - Range Watersheds, Riparian Zones and Economics, Interrelationships in Management and Use, Oregon State University, Corvallis, Oregon.

Krueger, W.C., 1984.

Cattle grazing in Managed Forests. In:

Proc. Forestland Grazing Symposium, in press.

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CHAPTER 10

LIVESTOCK GRAZING

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CHAPTER 10 - LIVESTOCK GRAZING

RESOURCE AREA PROFILE

Description

After years of summer grazing by small flocks of sheep in the early 1800s, permanent livestock production was established in the San Luis Valley in about 1842. Settlement and ranching expanded rapidly in the second half of the 19th century, with sheep use predominant in the lower half of the valley and cattle and sheep grazing about equal in the upper or northern part of the valley.

Experiencing severe winter losses, most ranchers developed the use pattern that exists today: moving livestock from lower private lands in late spring to higher public lands (public lands and national forest lands) for the summer, then moving the livestock onto public lands in the late summer and fall, and subsequently back onto private lands before winter to utilize regrowth on hay fields and hay as the primary sources of roughage (forage).

During the early 1900s, drought and overgrazing combined with a lack-of-use regulations or supervision caused the condition of the range to decline. Following the enactment of the Taylor Grazing Act of 1934, the Grazing Service, with the help of district advisory boards, made specific allocations of public range to local livestock operators.

In 1941, Grazing District *f*8 was established to administer domestic livestock grazing on public domain in the San Luis Valley. During the period from 1941 to 1943, range adjudication work--the apportionment of grazing use on public range among eligible applicants-was accomplished. Individual or common allotments were established.

For the most part, the allowable use rates were excessive and the ranges continued to deteriorate. During the following several years the Grazing Service and later the BLM mainly issued licenses and permits and solved allotment boundary problems. Some downward adjustments in grazing use were made on very critical areas and on areas where the operators cooperated.

In the mid-1950s, the need for more appropriate stocking rates for individual allotments became obvious. As a result, range surveys were initiated on several grazing units to determine proper stocking rates for the various allotments. After these surveys were completed, stocking rates were reduced on most allotments. Many of these reductions were fairly drastic, ranging from 50 to 60 percent. Surveys continued intermittently through 1963, and reductions continued to be imposed. In the early 1960s some of the original surveys were rechecked, often resulting in additional reductions.

In 1973, several environmental groups and one individual group (usually referenced as Natural Resource Defense Council (NRDC), et al.) filed suit in Federal Court alleging that the Bureau of Land Management programmatic environmental statement on livestock grazing did not comply with the requirements of NEPA (42 USC 4321 et seq.) concerning BLM administration of public lands. The court in 1975 found largely for the plaintiffs and approved an agreement between the involved parties requiring completion of 212 site-specific environmental statements (ESs). The San Luis Resource Area was selected for the first grazing ES in Colorado. A proposed action and several alternatives were developed based on objectives developed in the Bureau's planning efforts for the area. In May 1978, the final grazing environmental impact statement (FEIS) for the resource area was completed. In September of the same year (1978) the Rangeland Program Summary (RPS) originally called Range Management Program, San Luis Resource Area was issued.

Condition and Trend

Reference Chapter 8 - Vegetation for Condition and Trend of the forage resources (vegetation).

EXISTING MANAGEMENT SITUATION (EMS)

Current Management

The previously discussed RPS identified the selected alternative that would be the livestock grazing management program for the San Luis Resource Area. Alternative "G," Balanced Multiple Use, was selected and summarized in the document. Briefly this alternative included the following actions.

A. Implement 54 new allotment management plans (AMPs) and continue with 10 of the 11 existing AMPs as described in the Proposed Action of the FEIS.

B. Implement 6 new AMPs revised to optimize wildlife benefits and modify 1 of 11 existing AMPs for wildlife benefits.

C. Implement 12 new AMPs revised to reduce costs of implementation.

D. Eliminate livestock grazing on nine management units as described in the Proposed Action plus one additional allotment (Posito Creek) acquired by the Colorado Division of Wildlife (DOW).

E. Implement less intensive management on 39 management units as described in the Proposed Action.

F. Implement less intensive management on 12 management units that had AMPs proposed in the Proposed Action.

An AMP is a livestock grazing plan dealing with a specific unit of range, providing a specific management program that considers livestock grazing in relation to other uses of the range and other renewable resource values--soil, water, vegetation, and wildlife. An AMP establishes the seasons of use, the number of domestic animals that would be allowed on the range, and the possible range improvements that would be needed, such as fencing and water development. The following steps were used in the preparation of AMPs.

Review the Bureau planning data, collect and analyze additional resource data (e.g. soils, water, vegetation, wildlife), and contact range users.

Identify resource problems (e.g. winter grazing by livestock on crucial winter range for deer).

Establish objectives that would enhance the resource and/or resolve resource problems (Table 10-1 identifies specific objectives for the AMPs.)

Develop a grazing system that would accomplish the objectives.

Establish the location for range improvements required for implementing the grazing system.

Develop evaluation procedures and conduct studies to determine the effects of each grazing system.

Implementation of Alternative "G" was scheduled over 8 years. The BLM proceeded to implement Alternative "G" in 1978. The FEIS identified the allowable level of grazing use for each allotment. In some cases, immediate reductions were recommended to arrest range deterioration or reverse apparent downward trend. These allotments were the first to be scheduled for AMP implementation.

Originally, it was planned to issue decisions as AMPs were implemented. But due to a change in BLM policy all decisions have been issued although not all AMPs have been implemented. Other decisions have also been issued as administrative actions were required by regulation in such cases as conflicting applications, change in class of stock, etc.

The FEIS also set forth a rudimentary allotment categorization. This placed allotments in one of two categories; 1) intensive management (basically allotment having AMPs), and 2) custodial (allotments not having AMPs written at the time of the EIS or not contemplated to have AMPs in the future). Several changes in BLM policy since 1978 have directed a recategorization of allotments into three categories. These policy changes, coupled with a need to further prioritize funding, and the availability of more on-the-ground data indicate a need for a more complex categorization. Criteria is being formulated and a new categorization is expected in the future. Table 10-2 shows the proposed and actual administrative actions on stocking levels that have taken place since 1978 and present category by allotment.

The FEIS identified the proposed implementation of 72 AMPs. This is in addition to the continuation of the 11 existing pre-EIS AMPs. To date 49 AMPs have been implemented.

Two of the original AMPs were eventually divided into seven separate ones because of reduced need for intensive management, reduced cost, desire of operators to run separately, changes in class of livestock, etc. In addition, two AMPs have been implemented on allotments that were not scheduled for implementation because of cost effectiveness. Grazing was eliminated on two of the allotments proposed for AMPs because of loss of grazing preference for failure to apply for transfer and relinquishment of grazing preference. This is in addition to the allotment acquired by the Colorado Division of Wildlife. The nine management units scheduled for elimination of grazing in the FEIS were completed in 1979.

Several of the implemented AMPs have been completely revised because of improvement costs and feasibility, change in class of stock, operator desires, etc. All changes were evaluated and documented in environmental assessments. Table 10-3 illustrates the types of new improvements proposed and new improvements constructed by allotment. It also shows the benefit/cost ratio by allotment.

Intensive allotment monitoring began in 1978 along with AMP implementation. Some monitoring had been in place prior to 1978 on existing AMPs. Implementation workload necessitated that monitoring studies be placed on the ground at the time of AMP implementation and not before. Monitoring studies will be conducted on all allotments eventually.

Basic monitoring consists of range trend, actual use, and utilization studies. Trend studies are placed in key areas and are tied to AMP objectives. Each AMP discusses management objectives for that allotment and the studies are used to monitor progress toward these objectives. In addition, ecological site inventories (ESI) are being conducted as part of the monitoring program on all allotments.

Actual use and utilization data are gathered annually on each implemented AMP, as far as practicable, to provide a yearly correlation between actual use made by livestock and the relative amount of forage consumed. This allows an evaluation to be made of the appropriate stocking levels. Where specific wildlife objectives exist in an AMP, special studies are initiated to monitor wildlife use, indicate areas of competition, and alert the manager to resource conflicts that may exist.

Evaluations are scheduled on AMPs varying with the complexity of grazing systems and on-going workload. Trend data is correlated with actual use/utilization data and an evaluation is made of progress toward achievement of AMP objectives. To date 25 AMPs have been subjected to evaluation. One grazing system has been revised following an evaluation. Management objectives were revised on two AMPs following evaluations.

A special hydrologic study was also begun in 1979 to monitor and assess the impacts of various grazing systems on hydrologic outputs and erosion/ sedimentation responses. These studies are still on-going and no conclusions have yet been drawn.

Based on the FEIS schedule, 27 AMPs are still scheduled for implementation. Several of the allotments have had new range improvements constructed, but the AMPs are not fully implemented because of budget restraints and new range policy, the remaining allotments will be scrutinized closely before they will be scheudled for full implementation. The allotments will be re-evaluated using new categorization criteria and may be dropped from implementation or revised to make them more cost effective.

Animal damage control activities on BLM lands are guided by the Department of the Interior policy, memorandum of understanding with the Colorado Division of Wildlife and the United States Department of Agriculture and the Animal Damage Control Plan for the San Luis Resource Area. This plan is prepared jointly with the U.S. Department of Agriculture (USDA), Colorado State Department of Agriculture (CSDA), Colorado Division of Wildlife (CDOW) and the BLM. The USDA have the overall responsibilities for the program and supervises all control activities. The BLM has approval responsibilities for the specific control actions on the public lands.

SUPPLY-DEMAND ANALYSIS

There are 160 livestock grazing allotments in the SLRA. This amounts to _____ acres of public lands being grazed by livestock by authorization and _____ acres not being grazed by livestock. Table _____ shows the authorized grazing level for 1985.

TABLE _____

Year	Number			AUMs		
	Cattle	Sheep	Horses	Cattle	Sheep	Horses
1985	11,750 1/	23,235	80	22,246	10,636	466

1/ The number of cattle shown is adult cattle and does not include calves.

Grazing is a major use of the public lands. The local economics depend heavily on the agriculture industry of which ranching is a major contributor. Approximately 30% of the local ranching operations depend on the use of public lands in support of their livestock forage needs. Amount of dependency varies greatly. There are 109 individual operations that have BLM grazing permits.

Current trends show the number of sheep are continuing to decline and that the number of beef cattle and calves fluctuates from year to year. This would indicate that the demand for sheep forage from the public lands should decline and forage demand for cattle should increase over the long term.

Based on the SLRA-FEIS the projected AUM availability for livestock grazing by the year 2005 would be 52,000 AUM's if the grazing program (AMPs) are fully implemented. The U.S.F.S. projects in their land use plan to provide 105,000 to 108,000 AUMs of livestock forage annually. The BLM is currently authorizing approximately 33,000 to 34,000 AUMs annually.

CAPABILITY ANALYSIS (CA)

Resource Capability Levels (RCLs) are not applicable to livestock grazing since the decision document (RPS) has been issued for grazing on public lands. Table 10-1 shows the forage allocation for livestock and allotment category. Table 10-2 shows the grazing system proposed and/or implemented and projects proposed and/or installed. Table 10-3 summarized the objectives for the I allotments. Monitoring is a continuing effort on all allotments. Due to policy changes concerning Riparian areas and new wildlife data, some conflict resolution may cause a change in the specific grazing programs on some grazing allotments.

The following forms described the Resource Capability Levels (RCLs), the management practices to be applied to each particular RCL, and the specific site(s) within each RCL.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Livestock Grazing Specialist Name R. Wheeler

Date 2-27-87

Resource Capability Level 1 (define the highest priority for management)

Allotments possibly needing minor changes in objectives due to variance with Riparian, Wildlife, ACECs, T & E vegetative species, etc. and current monitoring shows a few allotments where minor commensurate accomodations possibly (up and/or down) need to be made.

Resource Capability Level 2 (define the second highest priority for management)

All other allotments (I & M) which are still effectual (per decision in Grazing EIS) and are not needing modifications. See Table 10-1, 10-2, and 10-3.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Livestock Grazing

Specialist Name R. Wheeler Date 2-27-87

Describe the types of management that you would use in RCL 1 areas

Revisit those allotments where riparian, wildlife, etc., variances are deemed needed or where monitoring indicates a modification may possibly be needed. Determine changes needed if any and implement.

Describe the types of management you would use in RCL 2 areas

Continue present management as specified in grazing decisions. See Table 10-1, 10-2, and 10-3.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name R. Wheeler Area Number (from GIS Theme) _____

Resource Livestock Grazing RCL (i.e., 1, 2 or 3) 1

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

Riparian areas, wildlife conflict areas, etc., e.g. allotments _____, _____, _____, _____, etc.

Rationale for RCL

To reflect changes in policy or new information regarding riparian, ACEC's, T & E vegetation, etc. Also to adjust where monitoring has shown any possible changes needed.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name R. Wheeler Area Number (from GIS Theme) _____

Resource Livestock Grazing RCL (i.e., 1, 2 or 3) 2

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

All other lands where grazing is occurring in SLRA.

Rationale for RCL

Continue present valid and viable management as specified in existing grazing decisions. See Table 10-1, 10-2, and 10-3.

DATA THEMES

There are 6 themes created for use in the livestock grazing chapter and they are described below.

The following attributes are used to describe the Allotment Boundary (ALB) theme polygons displayed on the GIS maps.

	1/	2/	3/	4/	5/
4501		$	I	%	N

1/ RMAS allotment number

2/ Seperator

3/ Allotment Category Classification:

- I - Improve
- C - Custodial
- M - Maintain

4/ Seperator

5/ Allotment Status:

- Y - AMP Implemented) Only used with I
- N - AMP Not Implemented) category allotments

- O - No grazing system) Only used with M or C
- G - Grazing system stipulated on grazing permit) category allotments

The following attributes are used to describe the Pasture Boundary (PBD) theme polygons displayed on the GIS Maps.

	1/	2/	3/	4/	5/
4501		No.	1	-	North

1/ RMAS allotment number

2/ Seperator

3/ Pasture number

4/ Separator

5/ Pasture name

The following attributes are used to describe the Range Structural and Vegetative Project (RGL) (line data) and (RGP) (point data) themes, and the Range Water Project (RWL) (line data) and (RWP) (point data) themes.

1/	2/	3/	4/	5/	6/	7/
4501	No.	F	=	3506	$	5000

1/ RMAS allotment number

2/ Seperator

3/ Type of projects:

F - Fence
N - Vegetative Manipulation
E - Seedings
X - Exclosures/Enclosures

RGP theme (point data)
G - Cattleguards
L - Corrals

RWL theme (line data)
P - Pipelines
V - Ditch

RWP theme (point data)
C - Catchment
R - Reservoirs
S - Springs
*T - Livestock watering trough - only used
W - Wells
G - Guzzlers

4/ Seperator

5/ Project Number

6/ Seperator

7/ Project Maintenance Responsibility

5000	RMAS permittee number
COM2	Used where there is a community allotment with more than 1 permittee
SAG	Saguache County
CON	Conejos County
RG	Rio Grande County
ALA	Alamosa County
DOW	Colorado Division of Wildlife
HWY	State Highway Department
BLM	Bureau of Land Management

* Note only the allotment number, first seperator and T is used for trough location, i.e., 4501 No. T.

The Theme is a LIST of group used per map

```
  LIST MAPS ALB+ Theme
0g8u @0g
  1459 MAPS IN MASTER PROJECT SANLUIS

 ?BANTONI  3     ALBBALDY   3     ALBBIGHPK  3     ALBBLANCA  3
 ALBBONAZA 3     ALBBUSHPK  3     ALBCAPULN  3     ALBCENTRO  3
 ALBCHESTR 3     ALBCOALDL  3     ALBDELNOR  3     ALBDOGMTN  3
 ALBDRYLKS 3     ALBFOXCRK  3     ALBFULCGL  3     ALBGOSHDM  3
 ALBGRAVGL 3     ALBGRNEMT  3     ALBGROSCK  3     ALBHICKBR  3
 ALBHOOPRE 3     ALBHOOPSE  3     ALBINDIAH  3     ALBKIOWAH  3
 ALBKLONDM 3     ALBLAGARI  3     ALBLAJARC  3     ALBLAKEMT  3
 ALBLASAUS 3     ALBLAUGHG  3     ALBLIBRTY  3     ALBLIMECR  3
 ALBLKMTNE 3     ALBLOBATO  3     ALBLOOKMT  3     ALBLOSPIN  3
 ALBLSEGNE 3     ALBMANANE  3     ALBMANASA  3     ALBMEDANR  3
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 ALBRITOAL 3     ALBSAGUAC  3     ALBSANDCP  3     ALBSEVPLA  3
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REFERENCES

List of Information Consulted

1. San Luis Resource Area Grazing Environmental Statement Final, Maye, 1978
2. San Luis Resource Area Range Management Program Document, September, 1978
3. San Luis Resource Area Rangeland Program Summary Update, May, 1985
4. Colorado Agricultural Statistics Bulletins 1-77, 1-81, 1-85, 1-86
5. Rio Grande National Forest Final Environmental Impact Statement - 1982
6. John Bethke, Planning Specialists, RGNF, M.V.
7. Jake Jakubowski, Range Specialist, BLM, CCDO

List of Laws and Regulations

1. Taylor Grazing Act of 1934
2. Federal Land Policy and Management Act of 1976
3. Public Rangelands Improvement Act of 1978
4. National Environmental Policy Act of
5. National Historic Presevation Act of 1966
6. Endangered Species Act of 1973
7. BLM Interm Management Policy & Guidelines for Lands Under Wilderness Review
8. 43 Code of Federal Regulations 4100

List of Washington Office Instruction Memos

1. WO-82-292, Final Grazing Management Policy
2. WO-82-650
3. WO-83-27, Final Rangeland Improvement Policy

List of Colorado State Office Instruction Memos

(MISSING)

TABLE 10-1

FORAGE ALLOCATION

RMAS No.	Allotment Name as Shown in EIS	Active Preference Before FEIS (AUMs)	Active Preference FEIS Level (AUMs)	Decision Level (AUMs)	Management Category
4501	Poncha Pass West	555	375	375	I
4505	Poncha Pass-East	429	380	645	I
4506	East Side	1213	1875	1820	I
- Total	Arizona-Colorado	1642	2255	2465	
4502	West Clover Creek	75	45	45	I
4510	Turquoise Gulch	539	539	559	I
4513	Kelly Creek	567	566	567	I
4514	Kerber Creek	307	274	274	I
4517	Noland Gulch	541	541	541	I
4519	West San Luis	159	159	159	I
4523	East San Luis	103	103	103	I
- Total	E & W San Luis Creek	262	262	262	
4521	Piney Creek	171	171	180	I
4522	Steel Canyon	210	210	205	I
4524	Mirage	187	187	191	
4527	Valley View Hot Sp.	428	427	428	I
4530	Cotton Creek	313	312	313	I
4315	Dimick Gulch	77	77	77	I
4531	Stone House	390	390	390	I
4532	Crow	203	200	203	I
4533	Copper Butte	445	440	445	I
- Total	Mineral Hot Springs	1038	1030	1038	
4534	McIntyre Gulch	311	311	132	I
- Total	Findley Gulch	1127	753	703	
4535	Cottonwood	342	256	217	I
4536	Findley Gulch	785	497	487	I
4540	Dry Gulch	303	303	303	I
4560	Laughlin Gulch	150	150	150	I
- Total	Laughlin Gulch	453	453	453	
4541	Poison Gulch	780	782	734	I
4558	East Hoagland Hill	75	75	76	I
- Total	Poison Gulch	855	867	810	
4545	Cross Creek	300	301	300	I
4546	Trickle Mtn.	1200	776	776	I

TABLE 10-1 (Cont'd)

RMAS No.	Allotment Name as Shown in EIS	Active Preference Before FEIS (AUMs)	Active Preference FEIS Level (AUMs)	Decision Level (AUMs)	Management Category
4547	Sheep Creek	202	202	202	I
4548	Taylor Canyon	245	245	245	I
4550	Rabbit Canyon	290	292	289	I
4551	Saguache Park	119	119	118	I
4552	Hat Springs	327	323	327	I
4554	Robb Ranch	113	113	113	I
4557	Hoagland Hill	228	228	228	I
4562	Mitchell	51	25	51	I
4563	West Tracy Ridge	82	48	42	I
4566	Tracy Cattlemen's	2930	2847	2847	I
4565	Tracy Individual	99	100	100	I
4567	Biedell Creek	172	172	172	I
4568	E. of Carnero Creek	631	630	467	I
4569	Upper Coolbroth	119	74	74	I
4570	Lower Coolbroth	58	29	29	I
4571	Carnero Creek	104	104	104	I
4572	La Garita	73	73	73	I
4574	Rio Grande Canal	225	225	225	I
4307	Alder Creek	20	20	20	I
4305	Sanderson	32	32	32	I
4304	Bowen	31	21	21	I
4402	Pup Peak	406	404	406	I
4401	Limekiln	373	370	373	I
4403	Nicomodes	212	212	200	I
4404	Refuge	92	92	92	I
- Total	Nicomodes	304	304	292	
4405	Raton Creek	386	387	274	I
4406	Rock Creek	1146	1147	1147	I
4201	McMahon	1309	1287	1287	I
4412	Greenie Mtn.	720	598	598	I
4411	Gato-Hutchinson	228	228	228	I
4410	Triangle	315	315	315	I
4216	Jadero Flat	322	322	322	I
4206	Poso Creek	206	206	209	I
4207	Capulin	588	587	588	I
4219	Romero Canyon	127	127	125	I
4220	Ra Jadero Canyon	621	621	617	I
4213	Garambuyo	582	581	582	I
4214	Trujillo	213	213	213	I
4210	Crossroad	298	298	298	I
4211	Gosline	68	68	68	I
- Total	Cinder Pits	1161	1160	1161	
4212	Ciscom Flat	191	192	191	I

TABLE 10-1 (Cont'd)

RMAS No.	Allotment Name as Shown in EIS	Active Preference Before FEIS (AUMs)	Active Preference FEIS Level (AUMs)	Decision Level (AUMs)	Management Category
4227	La Jara Creek	50	40	31	I
4222	Little Mogotes	1172	1444	1202	I
4226	Grande-Mogote	540	522	522	I
4225	Mogote Flat	206	199	206	I
4224	Poso	315	276	200	I
4229	Los Mogotes	360	315	315	I
4234	Big Horn Creek	90	88	90	I
4235	Railroad	152	152	172	I
4236	Llano	178	150	150	I
4239	San Antonio	222	212	222	I
4240	Alta Lake	425	288	288	I
- Total	Alta Lake	647	500	510	
4242	Twin Lakes	664	653	653	I
4245	Pinon	399	393	292	I
4248	Kiowa Hills	208	208	204	I
4250	Eight Mile	237	212	212	I
4249	Pinon Hills	538	391	500	I
4251	Mesa Common	350	315	263	I
4252	San Luis Hills	110	72	110	I
4253	Flat Top	426	328	348	I
4256	East bend	149	87	149	I
4254	Fairy Hills	47	36	47	I
- Total	Rio Grande Common	1082	838	870	
4255	La Sauses	139	128	128	I
4117	Tobin Creek	235	235	235	I
4107	Foothills	279	257	260	I
4113	Blanca/Fourmile	36	36	36	I
4102	Lakes	36	36	36	I
4103	Dry Lakes	103	103	103	I
- Total	Dry Lakes	139	139	139	
4542	Tuttle Creek	48	48	48	I

TABLE 10-1 (Cont'd)

RMAS No.	Allotment Name	Active Preference Before FEIS (AUMs)	Active Preference FEIS Level (AUMs)	Decision Level (AUMs)	Management Category
4504	Round Hill	10	10	10	C
4503	Clover Creek	5	5	5	C
4507	San Luis Creek No. 1	6	6	6	C
4508	Alder Creek	58	58	58	C
4509	Spring Creek	75	75	75	C
4511	San Luis Creek No. 3	12	12	12	C
4515	South Kerber Creek	12	12	12	C
4516	North Kerber Creek	18	18	18	C
4518	Nye	90	76	76	C
4520	Silver Creek	8	8	8	C
4317	Rito Alto	45	45	45	C
4316	San Isabel Creek	12	12	12	C
4539	Calvert Fenced F.R.	14	14	14	C
4559	Ward Fence Tract	18	18	18	C
4544	Indian Creek	7	7	7	C
4546	Meadow Fenced	20	20	20	C
4555	Mesa	20	20	20	C
4556	Mill Creek	45	45	22	C
4561	Higgins Springs	49	49	49	C
4564	Tracy Ridge	45	45	45	C
4310	Indian Head	28	28	28	C
4309	County Line	18	18	18	C
4306	Shaw Creek	44	44	44	C
4303	Schrader Creek	53	42	42	C
4202	Alamosa River	40	40	40	C
4319	Alamosa Prairie	11	11	11	C
4259	Chicago Bogs	52	52	52	C
4258	Del Rancho	12	12	12	C
4232	Las Mesitas	7	7	7	C
4241	South Hills	75	75	75	C
4243	River	200	200	200	C
4244	South Valley	136	136	136	C
4247	Braiden	60	60	50	C
4320	Oxbow	8	8	8	C
4101	Rio Grande	98	98	98	C
4106	Allotment B	3	3	3	C
4108	Dow Pasture	14	14	14	C
4109	Phiffer Pasture	4	4	4	C
4115	Caldwell Pasture	13	13	13	C
4312	Bachelor Lake	24	14	24	C
4110	Spring Pasture	10	10	10	C
4111	Sand Pasture	10	10	10	C
4112	Crow Pasture	40	40	40	C
4126	Section 15 Lease	15	15	15	C
4103	Dry Lakes	4	4	4	C
4577	Hellgate	29	29	29	C
4102	Zapata Falls	246	246	246	M

TABLE 10-3
INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4501	Poncha Pass-West	Maintain Present 10%-15% big sagebrush cover for wildlife.	Increase ground cover from 20% to 35%. Reduce erosion class from "Moderate-Slight" to "Stable."	--	Maintain forage production for cattle at 375 AUMs.	Increase crested wheatgrass from 20% to 30%.
4505	Arizona-Colorado Poncha Pass-East:	Maintain present wildlife habitat.	Increase ground cover on all seeded areas to 25%.	--	Increase livestock forage production from 429 AUMs to 625 AUMs.	Increase pine needlegrass from 21% to 30%. Monitor western wheatgrass and crested wheatgrass.
4506	East Side:	Maintain present wildlife habitat.	Increase ground cover on all seeded areas to 25%	--	Increase livestock production as follows -- Commanche seeding: 525 AUMs to 666 AUMs; Native seeding: 2,025 AUMs to 2,600 AUMs.	Increase western wheatgrass and needle-and-thread from 22% to 35%. Monitor crested wheatgrass and Russian wildrye.
4502	West Clover Creek	Maintain at least 5% canopy cover of big sage for wildlife.	Increase ground cover from 20% to 35%.	--	Maintain forage production for cattle at 45 AUMs.	Increase crested wheatgrass from 20% to 30%. Monitor western wheatgrass and pine needlegrass.

** Erosion Condition Class. The following expressions and numerical ratings are used for the current erosion activity: Stable = 0-20; Slight = 21-40; Moderate = 41-60; Critical = 61-80; Severe = 81-100. Seven categories of surface features (soil movement, surface litter, surface rock, pedestalling, rills, flow patterns, and gullies), each having a numerical rating, were used to determine the BLM rating system for current erosion activity.

-- No specific objective for this resource was identified in AMPs.

TABLE 10-3
INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4510	Turquoise Gulch	Maintain habitat for 30 antelope for 9 months and 30 deer and 20 elk during winter.	--	--	Increase forage production for cattle from 539 AUMs to 845 AUMs.	Monitor needle-and-thread.
4513	Kelly Creek	--	Reduce erosion class from "Slight" to "Stable" by increasing ground cover from 15% to 30%. to 30%.	--	Maintain forage production for cattle at 603 AUMs.	Increase western wheatgrass and needle-and-thread from 3%-5% to 20%.
4514	Kerber Creek	Reserve 90% annual growth of mountain mahogany for deer.	Reduce erosion class from "Slight" to"Stable" by increasing ground cover from 15% to 30%.	--	Maintain forage production for cattle at 274 AUMs.	Maintain Arizona fescue at 33% of species composition. Increase western wheatgrass from 3% to 20%.
4517	Noland Gulch	Maintain mountain mahogany at 3% to 5% and reserve 90% annual growth for deer and elk.	Reduce erosion class from "Slight" to "Stable" by increasing ground cover from 15% to 30%.	--	Maintain forage production for cattle at 541 AUMs.	Increase western wheatgrass and needle-and-thread from 1%-5% to 20%.
4519 4523	West San Luis East San Luis	Maintain 15% forbs, 35% shrubs, and 50% grass to assure forage for wildlife.	Maintain erosion class of "Slight."	--	Maintain forage production for cattle at 262 AUMs.	Increase western wheatgrass from 15% to 20%.
4521	Piney Creek	Reserve 90% annual growth of mountain mahogany for elk and deer.	--	--	Maintain forage production for cattle at 171 AUMs.	Maintain present species composition at 60% grass, 10% forbs, and 30% browse. Monitor needle-and-thread and western wheatgrass.

TABLE 10-3
INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4522	Steel Canyon	Reserve 90% annual growth of mountain mahogany for elk and deer. Maintain present habitat for 250 antelope; also 25-35 deer days per 2acre, and 5 elk days per acre. Maintain forbs at 15% of species composition.	Maintain erosion class of "Slight."	--	Maintain forage production for cattle at 210 AUMs.	Increase Arizona fescue and western wheatgrass to 30% species composition.
4524	Mirage	--	Increase ground cover from 17% to 25%.	--	Maintain forage production for cattle at 187 AUMs.	Increase western wheatgrass from 10% to 18%-20%.
4527	Valley View Hot Springs	Maintain habitat for 30 antelope and 100 deer yearlong. long.	Increase ground cover from 15% to 20%. Increase litter from 8% to 10%.	--	Increase forage production for cattle from 427 AUMs to 536 AUMs.	Change dominant grass from blue grama to western wheatgrass and needle-and-thread.
4530	Cotton Creek	Reserve 90% annual growth of mountain mahogany for big game.	Reduce erosion class from "High-Moderate" to "Slight" by increasing ground cover from 15% to 25%.	Maintain stream bank vegetation over at least 35% of shoreline of Cotton Creek.	Maintain forage production for cattle at 312 AUMs.	Increase western wheatgrass by 50%.
4315	Dimick Gulch	Reserve 75% annual growth of mountain mahogany for deer.	Reduce erosion class from "Slight" to "Stable" by increasing ground cover from 15% to 25%.	--	Maintain forage production for cattle at 18 AUMs and for horses at 59 AUMs.	Increase Indian ricegrass and sand dropseed from 5% to 15%.
	Mineral Hot Springs	--	Reduce erosion class from "High-Moderate" to "Low-Moderate."	--	Maintain forage production for cattle at 1,030 AUMs.	Increase Indian ricegrass and western wheatgrass from 1% to 10%. Maintain 10% winterfat and 6% fourwing saltbush.
4531	Stone House					
4532	Crow					
4533	Copper Butte					

TABLE 10-3
INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Aquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4534	McIntyre Gulch	--	Reduce erosion class from "Moderate" to "Slight."	--	Maintain forage production for cattle to 311 AUMs.	Increase Arizona fescue and sand dropseed from 20% to 30%.
4535 4536	Findley Gulch Cottonwood Findley Gulch	--	--	--	Maintain forage production for cattle at 753 AUMs.	Increase Indian rice-grass from 2% to 8% and western wheatgrass from 4% to 20%.
4540 4560	Laughlin Gulch Dry Gulch Laughlin Gulch	Reserve 90% annual growth of mountain mahogany for elk and deer.	Reduce erosion class from "Slight" to "Stable."	--	Maintain forage production for cattle at 426 AUMs.	Achieve the following plant composition: 15% forb, 25% browse, and 60% grass. Monitor western wheatgrass and Arizona fescue.
4541 4556	Poison Gulch Poison Gulch East Hoagland Hill	Reserve 90% annual growth of mountain mahogany for elk, deer, antelope, and mountain sheep.	Reduce erosion class from "Slight" to "Stable" by increasing ground cover from 15% to 30%.	Increase stream bank cover to 25% on Ford Creek. Maintain present riparian vegetation along Tuttle Creek.	Maintain forage production for cattle at 867 AUMs and for horses at 88 AUMs.	Increase Arizona fescue and western wheatgrass from 25% to 35% in the conifer and pinyon-juniper vegetative type, and increase western wheatgrass from a "trace" to 15% in the lower portions of the allotment.
4545	Cross Creek	Reserve 90% annual growth of mountain mahogany for big game.	Reduce erosion class from "Slight" to "Stable."	Reduce livestock grazing pasture on stream banks.	Maintain forage production for cattle at 301 AUMs.	Increase Arizona fescue from 3% to 15%.
4546	Trickle Mountain	Reserve 90% annual growth of mountain mahogany for big game and 15% as seedlings and young plants. Increase tufted hair-grass from 10% to 50% on wet areas of springs.	Reduce erosion class from "Moderate" to "Stable" by increasing ground cover.	--	Maintain forage production for cattle at 1,008 AUMs.	Increase western wheat-grass from 3% to 15% and Arizona fescue from 20% to 30%.

TABLE 10-3
INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4547	Sheep Creek	Maintain habitat by allowing only fall livestock grazing to avoid competition to wildlife for spring forage.	Reduce erosion class from "Slight" to "Stable" by increasing ground cover.	--	Maintain forage production for cattle at 202 AUMs.	Increase Arizona fescue from 3% to 8%.
4548	Taylor Canyon	Reserve 75% annual growth of mountain mahogany for deer and elk.	Increase ground cover from 13% to 20%. Reduce erosion class from "Moderate" to "Slight".	-- --	Maintain forage production for cattle at 245 AUMs.	Increase Arizona fescue from 27% to 35% and western wheatgrass from 5% to 15%. Maintain "trace of scarlet globemallow.
4550	Rabbit Canyon	Reserve 90% annual growth of mountain mahogany for deer and elk.	Reduce erosion class from "Moderate" to "Slight" by increasing ground cover from 15% to 20%.	--	Maintain forage production for cattle at 292 AUMs.	Increase Arizona fescue and western wheatgrass from 5% to 20%. Maintain scarlet globemallow at a "trace."
4551	Saguache Park	--	--	--	Maintain forage production for cattle at 118 AUMs.	
4552	Hat Springs	Reserve 50% annual growth of mountain mahogany for elk.	--	--	Maintain forage production for cattle at 373 AUMs.	Increase Arizona fescue and western wheatgrass from 5% to 15%. Monitor balance of 25% browse, 10% forbs, and 65% grass.
4554	Robb Ranch	Maintain 98% mountain mahogany in a satisfactory condition. Maintain habitat for 250 bighorn sheep.	Reduce erosion class from "Slight" to "Stable" by increasing ground cover from 24% to 35%.	--	Maintain forage production for cattle at 113 AUMs.	Monitor mountain mahogany at 5%. Increase Arizona fescue from 3% to 10%.

TABLE 10-3
INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4557	Hoagland Hill	Reserve 90% annual growth of mountain mahogany for sheep, deer, and elk.	Reduce erosion class from "Moderate" to "Slight" by increasing ground cover.	--	Maintain forage production for cattle at 263 AUMs.	Increase Arizona fescue from 5% to 20%.
4562	Mitchell	--	--	--	Maintain forage production for cattle at 25 AUMs.	Reduce lambsquarter from 64% to 32%. Increase winterfat from 8% to 27% and four-wing saltbush from 1% to 5%.
4563	West Tracy Ridge	Reserve 4-in. growth of winterfat for wildlife winter use.	Allow litter accumulation.	--	Maintain forage production for cattle at 16 AUMs.	Monitor blue grama, winterfat, and western wheatgrass.
4566	Tracy Cattlemen's	Reserve 70% annual growth of mountain mahogany for deer and elk.	Maintain present "Slight" erosion class.	--	Maintain forage production for cattle at 2,930 AUMs.	Increase winterfat and sand dropseed from 1% to 10%, western wheatgrass and Indian ricegrass from 1% to 10%, and pine needlegrass from 1% to 10%.
4565	Tracy Individual	Reserve 90% annual growth of mountain mahogany for deer and elk.	Maintain or reduce "Slight" erosion class. Maintain 25% plant density.	--	Maintain forage production for cattle at 100 AUMs.	Maintain present 90% grass, 4% to 5% forbs, and 15% browse species composition. Increase western wheatgrass and Arizona fescue. Reduce blue grama. Monitor squirrel tail and mountain mahogany.
4567	Biedell Creek	Increase mountain mahogany from 1% to 5%, and reserve 90% of annual growth	Reduce erosion class from "Moderate" to "Stable" by increasing ground cover from 20%	-- --	Maintain forage production for cattle at 172 AUMs.	Increase Arizona fescue from 15% to 30% and western wheatgrass from 2% to 15%.

TABLE 10-3
INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4568	East of Carnero Creek	Reserve 90% annual growth of mountain mahogany for deer and elk.	Reduce erosion class from "Moderate" and "Slight" to "Stable" by increasing ground cover from 10%-20% to 25%-30%.	--	Maintain forage production for cattle at 630 AUMs.	Increase western wheatgrass from 5% to 20%, and Arizona fescue from 20% to 40%.
4569	Upper Coolbroth	Reserve 90% annual growth of mountain mahogany for deer and elk.	Increase ground cover from 15% to 30%.	--	Maintain forage production for cattle at 74 AUMs.	Increase Arizona fescue from 40% to 60%.
4570	Lower Coolbroth	--	Increase ground cover from 15% to 30%. Reduce erosion class from "Slight" to "Stable."	--	Maintain forage production for cattle at 29 AUMs.	Increase Arizona fescue from 40% to 60%.
4571	Carnero Creek	Reserve 50% annual growth of mountain mahogany for big game.	Increase ground cover from 10% to 25%.	--	Maintain forage production for sheep at 104 AUMs.	Increase western wheatgrass and needle-and-thread from 1% to 20%.
4572	La Garita	Reserve 50% annual growth of mountain mahogany for big game.	--	--	Maintain forage production for sheep at 73 AUMs.	Maintain 3% mountain mahogany in rock outcrop areas. Increase western wheatgrass and needle-and-thread from 1% to 20%.
4574	Rio Grande Canal	--	Reduce bare ground from 45% to 37%.	--	Maintain forage production for sheep at 225 AUMs.	Increase Indian ricegrass from "trace" to 8%.
4307	Alder Creek	Reserve 90% annual growth of mountain mahogany for deer and elk.	--	--	Maintain forage production for cattle at 20 AUMs.	Maintain plant density at 30%-35%. Monitor western wheatgrass and Indian ricegrass.

TABLE 10-3
INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4305	Sanderson	Reserve 90% annual growth of mountain mahogany for deer and elk.	--	--	Maintain forage production for cattle at 32 AUMs.	Maintain 25% species composition of mountain mahogany, green rabbitbrush, winterfat, and four-wing saltbush.
4304	Bowen	Maintain 25% browse composition species. Reserve 90% annual growth of mountain mahogany for big game.	Reduce "Moderate" soil erosion class to "Slight."	--	Maintain forage production for cattle at 32 AUMs.	Increase western wheatgrass from 1% to 10%.
4402	Pup Peak	Maintain mountain mahogany, winterfat, four-wing saltbush, and little rabbitbush at 25% species composition for wildlife. Reserve 50% annual growth of mountain mahogany for deer and elk.	Reduce erosion class from "Slight" to "Stable" by increasing ground cover from 15% to 25%.	--	Maintain forage production for sheep at 404 AUMs.	Increase western wheatgrass from 2% to 10%.
4401	Limekiln	Maintain winterfat, little rabbitbush, and four-wing saltbush at 25% species composition for wildlife.	Reduce erosion class from "Slight" to "Stable" by increasing ground cover from 14% to 25%.	--	Maintain forage production for sheep at 370 AUMs.	Increase western wheatgrass from 1% to 10%.
4403 4404	Nicomodes Nicomodes Refuge	--	Reduce erosion class from "Slight" to "Stable" by increasing ground cover from 15% to 25%.	--	Maintain forage production for sheep at 304 AUMs.	Maintain little rabbitbush, winterfat, and four-wing saltbush at 25% species composition. Increase western wheatgrass from 1% to 10%

TABLE 10-3
INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4405	Raton Creek	Reserve 90% annual growth of mountain mahogany for deer and elk.	Reduce erosion class from "Slight" to "Stable" by increasing ground cover from 16% to 25%.	- -	Maintain forage production for cattle at 307 AUMs.	Increase western wheatgrass from 7% to 20%. Maintain winterfat, mountain mahogany, four-wing saltbush, and little rabbitbush at 25% species composition.
4406	Rock Creek	Reserve 90% annual growth of mountain mahogany for deer and elk.	Reduce erosion class from "Moderate" to "Stable" by increasing ground cover from 15% to 25%.	- -	Maintain forage production for sheep at 1,147 AUMs.	Increase mountain mahogany from "trace" to 20%, and western wheatgrass from 2% to 10%. Maintain winterfat, four-wing saltbush, and little rabbitbush at 25% species composition.
4201	McMahon	Reserve 90% annual growth of mountain mahogany for deer and elk.	Reduce erosion class from "Moderate" to to "Stable" by increasing ground cover from 15% to 25%.	Maintain present riparian vegetation condition.	Maintain forage production for sheep at 1,287 AUMs.	Maintain mountain mahogany, winterfat, four-wing saltbush, and little rabbitbush at 25% species composition.
4412	Greenie Mountain	Reserve 90% annual growth of mountain mahogany for deer and elk.	Reduce erosion class from "Moderate" to "Stable" by increasing ground cover from 14% to 25%.	- -	Maintain forage production for sheep at 598 AUMs.	Maintain little rabbitbush, mountain mahogany, winterfat, and four-wing saltbush at 25% species composition.
4411	Gato-Hutchinson	Maintain 25% ground cover for big game. Reserve 50% annual growth of mountain mahogany for deer and elk.	Reduce erosion class from "Moderate" to "Stable" by increasing ground cover.	- -	Maintain forage production for sheep at 228 AUMs.	Monitor western wheatgrass, blue grama, Arizona fescue, mountain mahogany, winterfat, and four-wing saltbush.

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INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4410	Triangle	Reserve 50% annual growth of mountain mahogany for deer and elk.	Reduce erosion class from "Moderate" to "Slight" by increasing	--	Maintain forage production for sheep at 315 AUMs.	Maintain mountain mahogany little rabbitbush, winterfat, and four-wing saltbush at 25% species composition.
4216	Jadero Flat	--	Reduce erosion class from "Critical" to "Slight" by increasing ground cover from 13% to 20%.	--	Maintain forage production for sheep at 323 AUMs.	Increase winterfat from 6% to 15% and western wheatgrass from 2% to 10%.
4206	Poso Creek	--	Reduce erosion class from "Moderate" to "Slight" by increasing ground cover from 15% to 20%.	--	Maintain forage production for sheep at 206 AUMs.	Increase winterfat from 13% to 20% and western wheatgrass from 5% to to 10%.
4207	Capulin	Increase winterfat from 40% to 45% and four-wing saltbush from 5% to 10%.	Reduce erosion class from "Moderate" to "Slight" by increasing ground cover.	--	Maintain forage production for sheep at 587 AUMs.	Increase western wheatgrass from 5% to 10% and blue grama from 5% to 15%.
4219	Romero Canyon	Reserve 90% annual growth of mountain mahogany for deer and elk.	Reduce erosion class "Slight" to "Stable" by increasing ground cover from 18% to 25%.	--	Maintain forage production for cattle at 127 AUMs.	Maintain Arizona fescue at 23% species composition.
4220	Ra Jadero Canyon	Reserve 90% annual growth of mountain mahogany for deer and elk.	Reduce erosion class from "Critical" to "Slight" by increasing ground cover from 13% to 20%.	--	Maintain forage production for cattle at 621 AUMs.	Increase western wheatgrass to 20%.
	Cinder Pits	--	Reduce erosion class	--	Maintain forage	Increase western wheat-
4213	Garambuyo		from "Moderate" to		production for	grass from 19% to 25%.
4214	Trujillo		"Slight" by increasing		cattle at 1,162 AUMs.	Maintain winterfat,
4210	Cross road		ground cover from 18%			little rabbitbush, and
						four-wing saltbush at

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INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4212	Ciscom Flat	Maintain winterfat, four-wing saltbush, and scarlet globe-mallow at 10%, 8%, and 3% respectively for antelope.	Reduce erosion class from "Moderate" to "Stable" by increasing ground cover 10%.	--	Maintain forage production for cattle at 192 AUMs.	Increase western wheat-grass from 8% to 28%.
4227	La Jara Creek	Maintain a diversity of vegetation for wildlife.	--	Maintain 35% shade and cover on La Jara Creek.	Maintain forage production for cattle at 64 AUMs.	Increase Arizona fescue from 30% to 50%. Maintain nodding brome at 25%.
4222	Little Mogotes	--	Reduce erosion class from "Slight" to "Stable" by increasing ground cover from 19% to 25%.	--	Maintain forage production for sheep at 720 AUMs and for cattle at 724 AUMs.	Increase western wheat-grass form 19% to 25%.
4226	Grande-Mogote	Reserve 50% annual growth of mountain mahogany for deer and elk.	Reduce erosion class from "Critical" to "Moderate" by increasing ground cover.	--	Maintain forage production for sheep at 426 AUMs.	Increase western wheat-grass from 20% to 30%.
4225	Mogote Flat	Maintain 50% annual growth of little rabbitbush, winter-fat, and four-wing saltbush for deer, elk, and antelope.	Reduce erosion class from "Moderate" to "Slight" by increasing ground cover from 15% to 20%.	--	Maintain forage production for sheep at 206 AUMs.	Maintain western wheat-grass at 35% and Indian ricegrass at 10% of species composition.
4224	Poso	Reserve 90% annual growth of mountain mahogany, big sage, and four-wing salt-bush for deer and antelope.	Reduce erosion class from "Moderate" to "Slight" by increasing ground cover from 15% to 20%.	--	Maintain forage production for cattle at 276 AUMs.	Increase western wheat-grass from 2% to 15% and winterfat from 3% to 15%.

TABLE 10-3
INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4229	Los Mogotes	Reserve 905 annual growth of mountain mahogany, big sagebush, and four-wing saltbush for big game.	Reduce erosion class from "Critical" to "Moderate" by increasing ground cover from 10% to 20%.	--	Maintain forage production for cattle at 662 AUMs.	Increase western wheatgrass from 6% to 15%. Monitor winterfat.
4234	Big Horn Creek	Reserve 50% annual growth of mountain mahogany for deer and elk.	Reduce erosion class from "Critical" to "Moderate" by increasing ground cover from 20% to 30%.	--	Maintain forage production for cattle at 88 AUMs.	Increase Arizona fescue from zero to 10% and western wheatgrass from 2% to 10%. Maintain 90% mountain mahogany in a satisfactory browse condition.
4222	Little Mogotes	--	Reduce erosion class from "Slight" to "Stable" by increasing ground cover from 19% to 25%.	--	Maintain forage production for sheep at 720 AUMs and for cattle at 724 AUMs.	Increase western wheatgrass from 19% to 25%.
4226	Grande-Mogote	Reserve 50% annual growth of mountain mahogany for deer and elk.	Reduce erosion class from "Critical" to "Moderate" by increasing ground cover from 15% to 20%.	--	Maintain forage production for sheep at 426 AUMs.	Increase western wheatgrass from 20% to 30%.
4225	Mogote Flat	Maintain 50% annual growth of little rabbitbush, winterfat, and four-wing saltbush for deer, elk and antelope.	Reduce erosion class from "Moderate" to "Slight" by increasing ground cover from 15% to 20%.	--	Maintain forage production for sheep at 206 AUMs.	Maintain western wheatgrass at 35% and Indian ricegrass at 10% of species composition.
4224	Poso	Reserve 90% annual growth of mountain mahogany, big sage, and four-wing saltbush for deer, elk and antelope.	Reduce erosion class from "Moderate" to "Slight" by increasing ground cover from 15% to 20%.	--	Maintain forage production for cattle at 276 AUMs.	Increase western wheatgrass from 2% to 15% and winterfat from 3% to 15%.

TABLE 10-3
INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4229	Los Mogotes	Reserve 90% annual growth of mountain mahogany, big sagebrush, and four-wing saltbush for big game.	Reduce erosion class from "Critical" to "Moderate" by increasing ground cover from 10% to 20%.	--	Maintain forage production for cattle at 662 AUMs.	Increase western wheatgrass from 6% to 15%. Monitor winterfat.
4234	Big Horn Creek	Reserve 50% annual growth of mountain mahogany for deer and elk.	Reduce erosion class from "Critical" to "Moderate" by increasing ground cover from 20% to 30%.	--	Maintain forage production for cattle at 88 AUMs.	Increase Arizona fescue from zero to 10% and western wheatgrass from 2% to 10%. Maintain 90% mountain mahogany in a satisfactory browse condition.
4235	Railroad	Reserve 90% annual growth of mountain mahogany and big sage on 1/3 of the allotment for deer and elk.	Reduce erosion class from "Critical" to "Moderate" by increasing ground cover from 15% to 25%.	--	Maintain forage production for sheep at 159 AUMs.	Increase western wheatgrass from 5% to 15%.
4236	Llano	--	Reduce erosion class "Critical" to "Moderate" by increasing ground cover.		Maintain forage production for sheep at 150 AUMs.	Increase winterfat from 10% to 20% in 10 years. Increase western wheatgrass from 1% to 5%.
4239 4240	Alta Lake San Antonio Alta Lake	Maintain winterfat, green rabbitbrush, and four-wing saltbush at 25% species composition.	Increase ground cover from 12% to 20% to reduce erosion class from "Slight" to "Stable."	--	Maintain forage production for sheep at 75 AUMs and for cattle at 500 AUMs.	Increase western wheatgrass from 1% to 10%.
4242	Twin Lakes	--	Reduce erosion class from "Moderate" to "Slight" by increasing ground cover 10%.	--	Maintain forage production for cattle at 653 AUMs.	Increase western wheatgrass from 1% to 20%.

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INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4245	Pinon	--	Reduce erosion class from "Moderate" to "Stable" by increasing ground cover to 25%.	Maintain present habitat for fisheries along the Rio Grande.	Maintain forage production for sheep at 393 AUMs.	Maintain winterfat, four-wing saltbush, and little rabbitbush at 30% species composition. Increase Indian ricegrass from "trace" to 10%.
4248	Kiowa Hill	--	Reduce erosion class from "Moderate" to "Stable" by increasing ground cover 10%.	--	Maintain forage production for cattle 208 AUMs.	Increase western wheatgrass from 5% to 10%.
4250	Eight Mile	--	Reduce erosion class from "Moderate" to "Stable." Increase ground cover from 21% to 40%.	--	Maintain forage production for cattle at 212 AUMs.	Increase western wheatgrass from 8% to 20% and 35% to 40%; Indian ricegrass from 10% to 20%; and combined winterfat and four-wing saltbush from 24% to 30%.
4249	Pinon Hills	Reserve 50% annual growth of winterfat and four-wing saltbush for antelope.	Reduce erosion class from "Moderate" to "Slight" by increasing ground cover from 19% to 30%.	Maintain riparian vegetation composition and cover.	Maintain forage production for sheep at 598 AUMs.	Increase western wheatgrass and sand dropseed from 5% to 20%.
	Rio Grande Common	--	Reduce erosion class from "Moderate" to "Slight" by increasing ground cover from 23% to 40%.	Maintain riparian vegetation along the Rio Grande.	Maintain forage production for sheep at 281 AUMs and for cattle at 557 AUMs.	Increase Indian ricegrass from 8% to 15%, and winterfat and four-wing saltbush from 22% to 30%.
4251	Mesa Common					
4252	San Luis Hills					
4253	Flat Top					
4256	East Bend					
4254	Fairy Hills					
4255	La Sauses	--	Reduce erosion class from "Critical" to "Slight" by increasing ground cover from 10% to 30%.	Improve riparian vegetation along the Rio Grande for approximately 2 miles.	Maintain forage production for cattle at 128 AUMs.	Increase western wheatgrass from "trace" to 10% and winterfat to 20%.

TA 10-3
INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
	Four Mile	--	Reduce erosion class from "Slight" to "Stable" by increasing ground cover from 20% to 30%.	--	Maintain forage production for cattle at 18 AUMs.	Increase alkali sacaton and Indian ricegrass from 15% to 25%.
4117	Tobin Creek	Reserve 50% annual growth of mountain mahogany for deer and elk.	--	--	Maintain forage production for cattle at 235 AUMs.	Increase western wheatgrass by 60%. Achieve 15% forbs, 25% browse, and 60% grass plant composition.
4107	Foothills	--	Reduce erosion class from "Moderate" to "Slight" by increasing ground cover from 10% to 20%.	--	Maintain forage production for cattle at 257 AUMs.	Maintain 15% forbs, 25% shrub, and 60% grass plant composition. Increase Indian ricegrass from 3% to 10% and western wheatgrass from 6% to 15%.
	Blanca	Remove 65% of vegetation growth on 5-year cycle to enhance and renew nesting cover on wetland edges and meadows.	Reduce erosion class from "Moderate" to "Stable" by increasing ground cover from 15% to 20%.	--	Maintain forage production for cattle at 48 AUMs.	Increase combined percentages of western wheatgrass, Indian ricegrass, and alkali sacaton from 5% to 15%.
	Dry Lakes	--	Reduce erosion class from "Slight" to "Stable." Increase ground cover on clay hardpan areas from 6% to 12%. Maintain 60% grass composition.	--	Maintain forage production for cattle at 139 AUMs.	Increase Indian ricegrass and western wheatgrass from 3% to 15%.

TABLE 10-3
INTENSIVE MANAGEMENT OBJECTIVES FOR RENEWABLE RESOURCES
(20-YEAR TIME FRAME)

RMAS No.	Allotment Name	Wildlife Habitat	Watershed Protection**	Acquatic Habitat	Livestock Production on NRL	Vegetation (Key Species)
4542	Tuttle Creek	--	Stablilize stream banks. Achieve and maintain plant cover to stabilize erosion.	--	Maintain forage production for cattle at 76 AUMs.	--

TABLE 10-2
MANAGEMENT PROPOSAL & RANGE IMPROVEMENTS

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
4501	Poncha Pass West 1,925 Ac. NRL	AMP-Proposed Action	Rest Rotation 3-Pasture	Rest Rotation 3-Pasture	3.2 Mi. Fence 2 Cattleguards	3.2 Mi. Fence 4 Cattleguards	.53 Mi. Pipeline 1 Spring	.5 Mi. Pipeline 1 Spring	5.74
	Arizona-Colorado	Existing AMP	Continue Existing Grazing Use	- - -	- - -	- - -	- - -	- - - -	N/A
4506	East Side: 10,013 Ac. NRL	- - -	- - -	Rest Rotation 4-Pasture					
4505	Poncha Pass-East: 2,160 Ac. NRL	Revised Existing AMP -Wildlife Effective	Continue Existing Grazing Use	Deferred Rotation 2-Pasture	.5 Mi. Fence	.5 Mi. Fence	- - -	- - - -	N/A
4502	West Clover Creek 320 Ac. NRL	Reduced Management-Custodial Benefit/Cost	Custodial	Rest Rotation 1-Pasture	- - -	- - -	- - -	- - - -	0.14
4510	Turquoise Gulch 3,806 Ac. NRL	Existing AMP	Continue Existing Grazing Use	Deferred Rotation 3-Pasture	- -	- - -	- - -	- - - -	N/A
4513	Kelly Creek 6,699 Ac. NRL	Existing AMP	Continue Existing Grazing Use	Rest Rotation 3-Pasture	- - -	- - -	- - -	- - - -	N/A
4514	Kerber Creek 4,500 Ac. NRL	AMP-Proposed Action	Rest Rotation 5-Pasture	Not Implemented	19.5 Mi. Fence	- - -	.75 Mi. Pipeline 1 Reservoir	1 Spring	2.09
4517	Noland Gulch 7,650 Ac. NRL	AMP-Proposed Action	Continue Existing AMP	Rest Rotation 3-Pasture	- - -	- - -	- - -	- - - -	N/A
	East & West San Luis Creek 2,740 Ac. NRL	Revised AMP Benefit/Cost	Deferred Rotation 2-Pasutre	Not Implemented	- - -	- - -	.6 Mi. Pipeline	- - - -	3.54
4519	West San Luis Creek								
4523	East San Luis Creek								

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
4521	Piney Creek 2,510 Ac. NRL	AMP-Proposed Action	Deferred Rotation 2-Pasture	Not Implemented	1.5 Mi. Fence	- - -	1.25 Mi. Pipeline 1 Spring	- - -	2.48
4522	Steel Canyon 4,472 Ac. NRL	AMP-Proposed Action	Deferred Rotation 2-Pasture	Not Implemented	2.3 Mi. Fence 1 Cattleguard	- - -	2.5 Mi. Pipeline	- - -	2.47
4524	Mirage 2,395 Ac. NRL	AMP-Proposed Action	Deferred Rotation 2-Pasture	Not Implemented	1.5 Mi. Fence	- - -	.8 Mi. Pipeline	- - -	1.43
4527	Valley View Hot Springs 4,927 Ac. NRL	AMP-Proposed Action	Continue Existing AMP	Deferred Rotation 3-Pasture	- - - -	- - -	- - - - -	.7 Mi. Pipeline	N/A
4530	Cotton Creek 3,880 Ac. NRL	AMP-Proposed Action	Rest Rotation 3-Pasture	Rest Rotation 3-Pasture	5.75 Mi. Fence 2 Cattleguards	6.4 Mi. Fence 3 Cattleguards	.75 Mi. Pipeline	.9 Mi. Pipeline	2.93
4315	Dimick Gulch 835 Ac. NRL	Revised AMP Wildlife Effective	Rest Rotation 3-Pasture	Not Implemented	1 Mi. Fence	- - -	1 Mi. Pipeline	- - -	1.80
4531 4332 4533	Mineral Hot Spgs. 10,260 Ac. NRL Mineral Hot Spgs Crow-Werner Shooker-Sturdevan	AMP-Proposed Action	Rest Rotation 3-Pasture	Not Implemented	- - - -	- - -	8 Mi. Pipeline	.6 Mi. Pipeline 1 Well 1 Storage Tank	1.63
4534	McIntyre Gulch 4,602 Ac. NRL	AMP-Proposed Action	Deferred Rest Rotation 3-Pasture	Deferred Rest Rotation 1-Pasture-1980	2.1 Mi. Fence	- - -	- - - - -	1 Storage Tank 1 Spring	2.95

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
	Findley Gulch 11,345 Ac. NRL	Revised AMP Benefit/Cost	Rest Rotation 3-Pasture	- - - - - -	- - -	- - - -	4.3 Mi. Pipeline	- - -	2.31
4536	Findley Gulch	- - -	- - -	Deferred Rotation 3-pasture		4 Cattleguards 1 Cattleguard		4.5 Mi. Pipeline 1 Storage Tank	
4535	Cottonwood	- - -	- - -	Rest Rotation 1-Pasture					
	Laughlin Gulch 6,643 Ac. NRL	AMP-Proposed Action	Rest Rotation 3-Pasture	Not Implemented	1.3 Mi. Fence	- - - -	1 Mi. Pipeline 1 Spring	- - -	4.53
4540	Dry Gulch								
4560	Laughlin								
	Poison Gulch 14,357 Ac. NRL	Revised AMP Wildlife	Rest Rotation 3-Pasture	Not Implemented	6.5 Mi. Fence	2 Cattleguards	.02 Mi. Pipeline 1 Reservoir 3 Check Dams	1.8 Mi. Pipeline	3.41
4541	Poison Gulch	Effective							
4558	East Hoagland Hill						1 Spring	1 Spring	
4545	Cross Creek 6,305 Ac. NRL	AMP-Proposed Action	Rest Rotation 4-Pasture	Deferred Rotation 2-Pasture	6.4 Mi. Fence 3 Cattleguards	1.5 Mi. Fence 1 Cattleguard	1.2 Mi. Pipeline 2 Wells 1 Spring	.8 Mi. Pipeline 2 Springs 1 Catchment	5.35
4546	Trickle Mtn. 19,562 Ac. NRL	AMP-Proposed Action	Rest Rotation 4-Pasture	Not Implemented	6.4 Mi. Fence 1 Cattleguard	.2 Mi. Fence 4 Cattleguards	1.5 Mi. Pipeline 2 Catchments 2 Reservoirs 1 Check Dam	2.0 Mi. Pipeline 1 Well 1 Storage Tank 2 Catchments 1 Spring	3.23
4547	Sheep Creek 2,031 Ac. NRL	AMP-Proposed Action	Deferred 1-Pasture	Deferred 1-Pasture	.75 Mi. Fence	1.0 Mi. Fence	1 Spring	1 Spring	35.43

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
4548	Taylor Canyon 2,902 Ac.NRL	AMP-Proposed Action	Deferred 1-Pasture	Deferred 1-Pasture	- - -	- - - - -	1 Storage Tank 1 Reservoir 1 Spring ____	- - - - - 1 Spring 1 Catchment	13.59
4550	Rabbit Canyon 3,835 Ac. NRL	AMP-Proposed Action	Deferred Rotation 2-Pasture	Deferred Rotation 2-Pasture	- - -	1 Cattleguard	2 Mi. Pipeline 1 Storage Tank 5 Check Dams ____	- - - - - 1 Catchment	1.48
4551	Saguache Park 1,920 Ac. NRL	AMP-Proposed Action	Continue Existing Cooperative grazing use with F.S.	Rest Rotation 8-Pasture	- - -	- - - - -	- - - - - -	- - - - - -	N/A
4552	Hat Springs 4,565 Ac. NRL	AMP-Proposed Action	Deferred 1-Pasture	Deferred 1-Pasture	1.25 Mi.	- - - - -	1.5 Mi. Pipeline 1 Spring	1.8 Mi. Pipeline	6.61
4554	Robb Ranch 1,488 Ac. NRL	AMP-Proposed Action	Deferred 1-Pasture	Not Implemented	- - - -	- - - - -	- - - - -	- - - - -	N/A
4557	Hoagland Hill 3,633 Ac. NRL	AMP-Proposed Action	Rest Rotation 3-Pasture	Deferred Rotation 2-Pasture	3 Mi. Fence	2.8 Mi. Fence	3 Mi. Pipeline ____	1.7 Mi. Pipeline 2 Catchments	3.36
4562	Mitchell 938 Ac. NRL	AMP-Proposed Action	Deferred Rest Rotation 1-Pasture	Deferred Rest Rotation 1-Pasture	- - - - -	- - - -	- - - - -	1 Storage Tank	0.48
4563	West Tracy Ridge 925 Ac. NRL	AMP-Proposed Action	Rest Rotation 1-Pasture	Rest Rotation 1-Pasture	- - - - -	- - - -	- - - - -	- - - - -	.10

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use		Fences & Cattleguards		Water Development		Benefit/ Cost
			Proposed	Implemented	Proposed	Constructed	Proposed	Constructed	
4566	Tracy Cattlemen's 27,749 Ac. NRL	Revised AMP Wildlife Effective	Rest Rotation 3-Pasture	Not Implemented	12.5 Mi. Fence	-----	7.6 Mi. Pipeline ____ ____	 1 Well 1 Storage Tank	1.39
4565	Tracy Individual 1,676 Ac. NRL	AMP-Proposed Action	Deferred 1-Pasture	Not Implemented	-----	-----	-----	-----	1.62
4567	Biedell Creek 2,462 Ac. NRL	AMP-Proposed Action	Rest Rotation 3-Pasture	Rest Rotation 3-Pasture	2.6 Mi. Fence 2 Cattleguards	2.6 Mi. Fence 3 Cattleguards	.4 Mi. Pipe- 1 Reservoir 1 Spring	.9 Mi. Pipe- 1 Reservoir 4 Springs	8.59
4568	E. of Carnero Cr. 11,849 Ac. NRL	AMP-Proposed Action	Rest Rotation 4-Pasture	Not Implemented	12 Mi. Fence 2 Cattleguards	1.5 Mi. Fence 1 Cattleguard	4.4 Mi. Pipeline 3 Reservoirs 3 Springs	1.5 Pipeline 2 Reservoirs 2 Springs	2.50
4569	Upper Coolbroth 1,780 Ac. NRL	AMP-Proposed Action	Deferred 1-Pasture	Deferred 1-Pasture	-----	-----	-----	-----	23.12
4570	Lower Coolbroth 605 Ac. NRL	AMP-Proposed Action	Deferred 1-Pasture	Deferred 1-Pasture	-----	-----	-----	-----	9.54
4571	Carnero Creek 2,318 Ac. NRL	Revised AMP Wildlife Effective	Deferred 1-Pasture	Not Implemented	-----	-----	-----	-----	13.59
4572	La Garita 1,082 Ac. NRL	Revised AMP Wildlife Effective	Deferred 1-Pasture	Not Implemented	-----	-----	-----	-----	9.68
4574	Rio Grande Canal 4,360 Ac. NRL	AMP-Proposed Action	Rest Rotation 3-Pasture	Rest Rotation 4-Pasture	60 Boundary Markers	20 Boundary Markers	3. Mi. Pipeline 1 Well 1 Storage Tank	1 Well	4.89

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
4307	Alder Creek 275 Ac. NRL	AMP-Proposed Action	Rest Rotation 1-Pasture	Rest Rotation 1-Pasture	- - - -	- - - - -	.5 Mi. Pipe-	- - - - -	8.90
4305	Sanderson 510 Ac. NRL	AMP Proposed Action	Rest Rotation 1-Pasture	Rest Rotation 1-Pasture	- - - -	- - - - -	.75 Mi. Pipe-line .25 Mi. Ease-ment 1 Spring	- - - - -	19.08
4304	Bowen 488 Ac. NRL	AMP-Proposed Action	Deferred 1-Pasture	Deferred 1-Pasture	- - - -	- - - - -	- - - - -	- - - - -	N/A
4402	Pup Peak 5,002 Ac. NRL	AMP-Proposed Action	Deferred Rest Rotation	Deferred Rotation	200 Boundary Markers 1.6 Mi. Fence Modification	25 Boundary Markers 2.5 Mi. Fence Modification	6 Mi. Pipe- * Well 1 Storage Tank 12 Check Dams	- - - - - *1 Well	5.02
4401	Limekiln 5,050 Ac. NRL	Revised AMP Benefit/Cost	Deferred Rest Rotation 4-Pastures	Deferred Rest Rotation 4-Pastures	200 boundary Markers	50 Boundary Markers	1 Storage Tank	- - - - -	1.03
4403 4404	Nicomodes 3,080 Ac. NRL Nicomodes Refuge	Revised AMP Benefit/Cost	Rest Rotation 3-Pasture	Not Implemented	1.25 Mi. Fence 20 Boundary Markers	- - - - -	- - - - -	- - - - -	2.01
4405	Raton Creek 3,940 Ac. NRL	Revised AMP Benefit/Cost	Deferred Rotation 2-Pasture	Not Implemented	- - - -	- - - - -	1.25 Mi. Pipe-line 1 Spring	- - - - -	2.28
4406	Rock Creek 12,680 Ac. NRL	AMP-Proposed Action	Rest Rotation 5-Pasture	Not Implemented	200 Boundary Markers	- - - - -	9.5 Mi. Pipe-line .75 Mi. Ease-ment 2 Wells 3 Storage Tanks 3 Reservoirs 10 Check Dams 1 Spring	- - - - -	2.53

*Waters both Pup Peak & Limekiln Allotments

TA[illegible] 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
4201	McMahon 15,016 Ac. NRL	AMP-Proposed Action	Rest Rotation 3-Pasture	Rest Rotation 3-Pasture	150 Boundary Markers	- - - - -	1.75 Mi. Pipeline 1 Spring	- - - - -	25.11
4412	Greenie Mtn. 8,114 Ac. NRL	AMP-Proposed Action	Rest Rotation 3-Pasture	Not Implemented	500 Boundary Markers	- - - - -	2.25 Mi. Pipeline 1 Well 1 Storage Tank	- - - - - 1 Well	2.75
4411	Gato-Hutchinson 1,960 Ac. NRL	AMP-Proposed Action	Deferred Rest Rotation 1-Pasture	Deferred Rest Rotation 1-Pasture	300 Boundary Markers	- - - - -	- - - - -	- - - - -	2.27
4410	Triangle 3,715 Ac. NRL	AMP-Proposed Action	Deferred Rest Rotation 1-Pasture	Deferred Rest Rotation 1-Pasture	100 Boundary Markers	- - - - -	- - - - -	- - - - -	3.51
4216	Jadero Flat 5,200 Ac. NRL	AMP-Proposed Action	Deferred Rest Rotation 3-Pasture	Deferred Rest Rotation 3-Pasture	20 Boundary Markers	20 Boundary Markers	- - - - -	- - - - -	9.86
4206	Poso Creek 2,240 Ac. NRL	AMP-Proposed Action	Deferred Rest Rotation 3-Pasture	Not Implemented	25 Boundary Markers	- - - - -	- - - - -	- - - - -	1.26
4207	Capulin 5,589 Ac. NRL	Revised AMP Benefit/Cost	Deferred Grazing 1-Pasture	Not Implemented	- - - - -	- - - - -	- - - - -	- - - - -	2.89
4219	Romero Canyon 1,730 Ac. NRL	AMP-Proposed Action	Deferred Rotation 2-Pasture	Deferred Rotation 2-Pasture	1.75 Mi.	2.3 Mi. Fence	2. Reservoirs	1 Reservoir	16.36
4220	Ra Jadero Canyon 6,730 Ac. NRL	AMP-Proposed Action	Rest Rotation 3-Pasture	Not Implemented	20 Mi. Fence 2 Cattleguards	6 Mi. Fence 2 Cattleguards	3.5 Mi. Pipeline 1 Catchment 4 Reservoirs 1 Spring	.2 Mi. Pipeline 2 Catchments 4 Reservoirs 3 Spring	1.20

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
	Cinder Pits 15,370 Ac. NRL	AMP-Proposed Action	Deferred Rest Rotation 3-Pasture	Not Implemented	19 Mi. Fence	- - - - -	11 Mi. Pipe-line 1 Well 2 Storage Tanks 1 Catchment	- - - - -	1.62
4213	Garambuyo								
4214	Trujillo								
4210	Crossroad								
4211	Gosline								
4212	Ciscom Flat 3,680 Ac. NRL	Existing AMP	Continue Existing Grazing Use	Rest Rotation 4-Pasture	- - - - -	- - - - -	- - - - -	- - - - -	N/A
4227	La Jara Creek 820 Ac. NRL	AMP-Proposed Action	Rest Rotation 1-Pasture	Rest Rotation 1-Pasture	- - - - -	- - - - -	- - - - -	- - - - -	8.20
4222	Little Mogotes 13,510 Ac. NRL	AMP-Proposed Action	Rest Rotation 3-Pasture	Deferred Rotation 3-Pasture	24 Mi. Fence	23.7 Mi. Fence 5 Cattleguards	12 Mi. Pipe- 1 Well 1 Storage Tank 2 Catchments 2 Reservoirs	- - - - - *1 Well 1 Catchment	1.51
4226	Grande-Mogote 5,232 Ac. NRL	AMP-Proposed Action	Rest Rotation 3-Pasture	Deferred Rotation 2-Pasture	50 Boundary Markers	50 Boundary Markers 2.25 Mi. Fence	- - - - -	- - - - -	7.41
4225	Mogote Flat 1.977 Ac. NRL	AMP-Proposed Action	Deferred Rotation	Deferred Rotation 2-Pasture	203 Boundary Markers	50 Boundary Markers	1 Reservoir	1 Reservoir	7.63
4224	Poso 5,240 Ac. NRL	Revised AMP Benefit/Cost	Deferred Rotation 2-Pasture	Deferred Rotation 2-Pasture	2.8 Mi.	2.8 Mi. Fence 1 Cattleguard	- - - - -	1 Well	3.74
4229	Los Mogotes 5,721 Ac. NRL	AMP-Proposed Action	Rest Rotation 3-Pasture	Rest Rotation 3-Pasture	12.5 Mi. Fence	4.5 Mi. Fence 2 Cattleguards	4 Reservoirs	1 Reservoir 1 Catchment 0.6 Mi. Pipeline	2.68

*Waters both little Mogotes and Cinder Pits

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use		Fences & Cattleguards		Water Development		Benefit/ Cost
			Proposed	Implemented	Proposed	Constructed	Proposed	Constructed	
4234	Big Horn Creek 760 Ac. NRL	Revised AMP Wildlife Effective	Rest Rotation 1-Pasture	Rest Rotation 1-Pasture	2 Mi. Fence	2 Mi. Fence	- - - - -	- - - - -	6.87
4235	Railroad 3,741 Ac. NRL	AMP-Proposed Action	Deferred Rest Rotation 3-Pasture	Deferred Rest Rotation 3-Pasture	60 Boundary Markers	20 Boundary Markers	0.2 Mi. Pipe-line	- - - - -	28.08
4236	Llano 5,261 Ac. NRL	AMP-Proposed Action	Deferred Rest Rotation 3-Pasture	Deferred Rest Rotation 3-Pasture	50 Boundary Markers	30 Boudnary Markers	- - - - -	- - - - -	2.36
	Alta Lake 10,392 Ac. NRL	Revised AMP Benefit/Cost	Deferred Rotation 4-Pasture	- - - - -	- - - - -	- - - - -	5 Mi. Pipeline 1 Well 1 Storage Tank	- - - - -	1.61
4239	San Antonio	- - - - -	- - - - -	Deferred Rotat-ion 2-Pasture	- - - - -	1 Mi. Fence		1 Well	
4240	Alta Lake	- - - - -	- - - - -	Deferred 1-Pasture	- - - - - - - - - -	2.3 Mi. Fence 2 Cattleguards	- - - - - -	1 Well	
4242	Twin Lakes 8,153 Ac. NRL	Existing AMP	Deferred Rest Rotation 4-Pasture	Deferred Rest Rotation 4-Pasture	- - - - -	- - - - -	- - - - - -	- - - - -	N/A
4245	Pinon 7,210 Ac. NRL	Reduced Manage-ment - Custodial Benefit/Cost	Custodial	Deferred Rotat-ion 2-Pasture	- - - - -	- - - - -	- - - - - -	- - - - -	1.03
4248	Kiowa Hills 4,302 Ac. NRL	Existing AMP	Continue Exist-ing Grazing Use	Rest Rotation 3-Pasture	- - - - -	- - - - -	- - - - - -	1 Well	N/A
4250	Eight Mile 5,640 Ac. NRL	Revised AMP Benefit/Cost	Deferred	Deferred 1-Pasture	- - - - -	1.2 Mi. Fence	- - - - - -	1 Storage Tank 1 Spring	1.56

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
4249	Pinon Hills 9,274 Ac. NRL	AMP-Proposed Action	Deferred Rest Rotation 3-Pasture	Not Implemented	30 Boundary Markers	-----	-----	------	1.61
	Rio Grande Com. 18,611 Ac. NRL	Revised AMP Benefit/Cost	Deferred Rest Rotation 3-Pasture	-----	8.5 Mi. Fence	-----	2 Wells 1 Storage Tank 1.5 Mi. Pipe-line 2 Reservoirs	------	1.16
4256	East Bend	-----	-----	Deferred Rest Rotation 1-Pasture	-----	-----	-----	------	--
4252	San Luis Hills	-----	-----	Deferred Rest Rotation 1-Pasture	-----	-----	-----	------	--
4253	Flat Top	-----	-----	Deferred Rest Rotation 3-Pasture	-----	-----	-----	------	--
4251	Mesa Common	-----	-----	Deferred Rest Rotation 3-Pasture	-----	-----	-----	------	--
4254	Fairy Hills	-----	-----	Not Implemented	-----	-----	-----	------	--
4255	La Sauses 3,200 Ac. NRL	Revised AMP Benefit/Cost	Deferred Rotation 2-Pasture	Not Implemented	-----	-----	2.5 Mi. Pipe-line	------	2.29
	Four Mile 320 Ac. NRL	Revised AMP Combined with Blanca	See 4113 Blanca	-------	-----	-----	-----	------	--

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
4117	Tobin Creek 6,126 Ac. NRL	AMP-Proposed Action	Deferred Rotation 2-Pasture	Deferred Rotation 2-Pasture	8.25 Mi. Fence 1 Cattleguard	1.4 Mi. Fence Removal 1 Cattleguard	.5 Mi. Pipeline 1 Well	----- 1 Well	5.79
4107	Foothills 4,700 Ac. NRL	AMP-Proposed Action	Deferred Rotation 2-Pasture	Deferred Rotation 2-Pasture	2.5 Mi. Fence	2.4 Mi. Fence	2.3 Mi. Pipeline 3 Springs	.4 Mi. Pipeline 1 Well 2 Spring	7.27
4113	Blanca/Four Mile 5,540 Ac. NRL	Revised AMP Combined with Four Mile	Rest Rotation 5-Pasture	Rest Rotation 5-Pasture	6.5 mi. Fence	-----	.5 Mi. Pipeline	-----	.577
	Dry Lakes 5,836 Ac. NRL	AMP-Proposed Action	Deferred Rest Rotation	Not Implemented	2.5 Mi. Fence	-----	.2 Mi. Pipeline	-----	1.83
4102	Lakes	3-Pasture					1 Well		
4103	Dry Lakes								
4120	Zapata Falls 5,991 Ac. NRL	AMP-Proposed Action	Deferred Rotation 2-Pasture	Deferred Rotation	3.5 Mi. Fence	-----	1 Mi. Pipeline	-----	2.08
4542	Tuttle Creek 1,169 Ac. NRL	Existing AMP	Continue Existing Cooperative Grazing use with Forest Service	Rest Rotation 5-Pasture	-----	-----	-----	-----	N/A
	Phone Line 800 Ac. NRL	Custodial	Custodial	Combine with Zapata Fall CMA	-----	-----	-----	-----	--
	Big East 1,440 Ac. NRL	Custodial	Custodial	Combine with Zapata Fall CMA	-----	-----	-----	-----	--
	Garner Creek 240 Ac. NRL	Elimination of Grazing	Elimination	Elimination	2 Mi. Fence	1.5 Mi. Fence	-----	-----	--
	South 440 Ac. NRL	Elimination of Grazing	Elimination	Elimination	2 Mi. Fence	1.5 Mi. Fence	-----	-----	--

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
	Elephant Rocks 3,517 Ac. NRL	AMP-Proposed Action	Deferred 1-Pasture	Elimination of Grazing	- - - - -	- - - - -	- - - - -	- - - - -	- -
	Masonic Park 400 Ac. NRL	Elimination of Grazing	Elimination of Grazing	Elimination of Grazing	- - - - -	- - - - -	- - - - -	- - - - -	- -
	Branch 2,457 Ac. NRL	AMP-Proposed Action	Rest Rotation 1-Pasture	Elimination of Grazing	3.5 Mi. Fence	- - - - -	2 Storage Tanks	- - - - -	- -
	Posito Creek 4,991 Ac. NRL	AMP-Proposed Action	Rest Rotation 3-Pasture	Elimination of Grazing	- - - - -	- - - - -	- - - - -	- - - - -	- -
	La Jara Canyon 275 Ac. NRL	Elimination of Grazing	Elimination	Elimination	- - - - -	- - - - -	- - - - -	- - - - -	- -
	Pastures 370 Ac. NRL	Elimination of Grazing	Elimination of Grazing	Elimination of Grazing	- - - - -	- - - - -	- - - - -	- - - - -	- -
	Mondragon Indiv. 385 Ac. NRL	Elimination of Grazing	Elimination of Grazing	Elimination of Grazing	2 Mi. Fence	2.5 Mi. Fence	- - - - -	- - - - -	- -
	Saddleback Mtn. 2,720 Ac. NRL	Elimination of Grazing	Elimination of Grazing	Elimination of Grazing	.25 Mi. Fence	0.5 Mi. Fence	- - - - -	- - - - -	- -
	Park Pasture 400 Ac. NRL	Elimination of Grazing	Elimination of Grazing	Elimination of Grazing	1.25 Mi. Fence	- - - - -	- - - - -	- - - - -	- -
	North Pasture 700 Ac. NRL	Elimination of Grazing	Elimination of Grazing	Elimination of Grazing	- - - - -	- - - - -	- - - - -	- - - - -	- -

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage		Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
4504	Round Hill 160 Ac. NRL		Custodial	Custodial	Custodial					
4503	Clover Creek 120 Ac. NRL		Custodial	Custodial	Custodial					
4507	San Luis Creek No.1 55 Ac. NRL		Custodial	Custodial	Custodial					
4508	Alder Alder Creek	4	Reduced Manage-ment-Custodial	Custodial	Custodial					
4509	Spring Creek	4	Benefit/Cost							
4511	San Luis Creek No.3 220 Ac. NRL		Custodial	Custodial	Custodial					
4515	South Kerber Cr. 760 Ac. NRL	4	Custodial	Custodial	Custodial					
4516	North Kerber Cr. 180 Ac. NRL	4	Custodial	Custodial	Custodial					
4518	Nye 1,460 AC. NRL	4	Reduced Manage-Ment-Custodial Benefit/Cost	Custodial	Custodial					
4520	Silver Creek 200 Ac. NRL		Custodial	Custodial	Custodial					
4317	Rito Alto 800 Ac. NRL		Custodial	Custodial	Custodial					
4316	San Isabel Creek 820 Ac. NRL		Custodial	Custodial	Custodial					
4539	Calvert Fenced FR 122 Ac. NRL		Custodial	Custodial	Custodial					
4559	Ward Fenced Tract 60 +/- NRL		Custodial	Custodial	Custodial					

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use		Fences & Cattleguards		Water Development		Benefit/ Cost
			Proposed	Implemented	Proposed	Constructed	Proposed	Constructed	
4544	Indian Creek 120 Ac. NRL	Custodial	Custodial	Custodial					
4546	Meadow Fenced 330 Ac. NRL	Custodial	Custodial	Custodial					
4555	Mesa 960 Ac. NRL	Custodial	Custodial	Custodial					
4556	Mill Creek 694 Ac. NRL	Originally Part of Hoagland Hill	Custodial	Custodial					
4561	Higgins Springs 753 Ac. NRL	Reduced Management Custodial- Benefit/ Cost	Custodial	Custodial					
4564	Tracy Ridge 893 Ac. NRL	Reduced Management Custodial- Benefit/ Cost	Custodial	Custodial					
4310	Indian Head 800 Ac. NRL	Custodial	Custodial	Custodial					
4309	County Line 200 Ac. NRL	Custodial	Custodial	Custodial					
4306	Shaw Creek 640 Ac. NRL	Custodial	Custodial	Custodial					
4303	Schriader Creek 640 Ac. NRL	Reduced Management Custodial - Benefit/Cost	Custodial	Custodial					
4202	Alamosa River 760 Ac. NRL	Reduced Management-Custodial Benefit/Cost	Custodial	Custodial					
4319	Alamosa Prairie 320 Ac. NRL	Custodial	Custodial	Custodial					

TABLE 13-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
4258	Del Rancho 160 Ac. NRL	Custodial	Custodial	Custodial					
4232	Las Mesitas 87 Ac. NRL	Originally Part of Los Mogotes	Rest. Rotation 3-Pasture	Custodial					
4241	South Hill 1323 Ac. NRL	Originally Part of Alta Lake	Deferred Rotation 4-Pasture	Custodial					
4243	River 2,324 Ac. NRL	Reduced Management-Custodial Benefit/Cost	Custodial	Custodial					
4244	South Valley 1,800 Ac. NRL	Reduced Management-Custodial Benefit/Cost	Custodial	Custodial					
4247	Braiden 960 Ac. NRL	Reduced Management-Custodial Benefit/Cost	Custodial	Custodial					
4320	Oxbow 120 Ac. NRL	Custodial	Custodial	Custodial					
4101	Rio Grande 2,975 Ac. NRL	Reduced Management-Custodial Benefit/Cost	Custodial	Custodial					
4106	Allotment B 160 Ac. NRL	Custodial	Custodial	Custodial					
4108	Dow Pasture 480 Ac. NRL	Custodial	Custodial	Custodial					
4109	Phiffer Pasture 160 Ac. NRL	Custodial	Custodial	Custodial					
4115	Caldwell Pasture 280 Ac. NRL	Custodial	Custodial	Custodial					

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
4312	Bachelor Lake 320 Ac. NRL	Custodial	Custodial	Custodial					
4110	Spring Pasture 600 Ac. NRL	Custodial	Custodial	Custodial					
4111	Sand Pasture 280 Ac. NRL	Custodial	Custodial	Custodial					
4112	Crow Pasture 1,040 Ac. NRL	Custodial	Custodial	Custodial					
4126	Section 15 Lease 240 Ac. NRL	Custodial	Custodial	Custodial					
4126	Section 15 Lease 140 Ac. NRL	Custodial	Custodial	Custodial					
4577	Hellgate 800 Ac. NRL	Custodial	Custodial	Custodial					
4237	Twin Lakes Ind.	Custodial	Custodial	Custodial					

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use		Fences & Cattleguards		Water Development		Benefit/ Cost
			Proposed	Implemented	Proposed	Constructed	Proposed	Constructed	
	Junction 200 Ac. NRL	Custodial	Custodial	Unallotted					
	Section 13 Tract 80 Ac. NRL	Custodial	Custodial	Unallotted					
	Unallotted 280 Ac. NRL	Continue	Unallotted	Unallotted					
	Unallotted 40 Ac. NRL	Continue	Unallotted	Out - Land Sold					
	Unallotted 400 Ac. NRL	Continue	Unallotted	Unallotted					
	Unallotted 160 Ac. NRL	Continue	Unallotted	Unallotted					
	Unallotted 680 Ac. NRL	Continue	Unallotted	Unallotted					
	Unallotted 400 Ac. NRL	Continue	Unallotted	Unallotted					
	Unallotted 1,500 Ac. NRL	Continue	Unallotted	Unallotted					
	Unallotted 360 Ac. NRL	Continue	Unallotted	Unallotted					
	Hot Creek 4,520 Ac. NRL	Unallotted	Unallotted	Unallotted					
	Unallotted 480 Ac. NRL	Continue	Unallotted	Unallotted					

TABLE 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
	Emperius 160 Ac. NRL	Unallotted	Unallotted	Unallotted					
	Unallotted 200 Ac. NRL	Continue	Unallotted	Unallotted					
	Dry Lakes 800 Ac. NRL	Custodial	Custodial	Unallotted					
	Unallotted 1,680 Ac. NRL	Continue	Unallotted	Unallotted					
	Unallotted 80 Ac. NRL	Continue	Unallotted	Unallotted					
	Unallotted 600 Ac. NRL	Continue	Unallotted	Unallotted					
	Unallotted 80 Ac. NRL	Continue	Unallotted	Unallotted					
	Unallotted 80 Ac. NRL	Continue	Unallotted	Unallotted					
	Unallotted 80 Ac. NRL	Continue	Unallotted	Unallotted					
	Unallotted 360 Ac. NRL	Continue	Unallotted	Unallotted					
	Unallotted 80 Ac. NRL	Continue	Unallotted	Unallotted					

TAble 10-2 Cont.

RMAS No.	Management Unit & Acreage	Selected Management	Type of Grazing Use Proposed	Type of Grazing Use Implemented	Fences & Cattleguards Proposed	Fences & Cattleguards Constructed	Water Development Proposed	Water Development Constructed	Benefit/ Cost
	Sheep Trail 280 Ac. NRL	Custodial	Custodial	Unallotted					
	Terrace Lakes 600 Ac. NRL	Unallotted	Unallotted	Unallotted					
	Bonanza 1,380 Ac. NRL	Unallotted	Unallotted	Unallotted					

CHAPTER 11

WILDLIFE HABITAT

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CHAPTER 11--WILDLIFE HABITAT

RESOURCE AREA PROFILE

Description

General

Public lands in the San Luis Resource Area provide eight important habitat types for terrestrial wild animals. Ten broad vegetative types combine to form six important habitat types, covering over 97 percent of the surface acreage of the resource area. These habitat types include the saltbush and greasewood type, half-shrub and winterfat type, grassland type, pinyon-juniper woodland type, mountain shrub and sagebrush type, and coniferous and broadleaf forest type. Two types--wetlands (marsh, riparian, and wet meadows) and rocky cliffs and canyons--are extremely limited (0.7 percent) in surface acreage, but each has special significance as habitat. The remaining vegetative type--annuals--has little importance as wildlife habitat. The section on vegetation gives details on the vegetative composition of each type showing the distribution and the acreages of the vegetative types in the resource area. The shrub overstory of the saltbush and greasewood type provide excellent habitat for magpies, mourning doves, jackrabbits, cottontails, many small mammals, and shrub nesting nongame birds. The high density of rabbits and other small mammals and birds also attracts a relatively high number of predators, such as the coyote and wintering birds of prey.

Antelope use the half-shrub and winterfat habitat type extensively, especially for winter range, but the fauna has relatively little diversity. Ground nesting birds such as the horned lark and western meadowlark are common, as are fossorial (burrowing) small mammals. The fauna which characterizes the grassland type is similar to that of the half-shrub and winterfat type. Antelope also use the grassland type extensively, often for summer and spring-fall range, and prairie dogs and horned larks are common.

The mountain-shrub and sagebrush type has special importance because of the winter forage and cover its browse plants provide for big game animals, especially deer and elk. The mountain-shrub and sagebrush type is also especially important for shrub nesting birds.

The pinyon-juniper and woodland type and its browse understory are extremely important for browsing big game animals such as deer and elk since they provide much of the forage and cover for their winter stress period. This type is also important for shrub nesting birds, hole nesting birds, and woodland mammals such as the porcupine and bobcat.

The coniferous and broadleaf forest type is important summer range for deer and elk, nesting habitat for band-tailed pigeons, and yearlong range for blue grouse. This type also provides important habitat for a wide variety of forest animals such as snowshoe hares, porcupines, black bears, cavity-dwelling mammals, accipter hawks, chickadees, woodpeckers, and jays.

Wetland habitat is extremely limited in the resource area, but it provides crucial habitat for the largest variety of wild animals, including most of those characteristic of other habitat types. The wetland type is a grouping of marshland, riparian (stream side) woodlands, and the wet meadows that occur with each. Presently, there are about 1,700 acres of marsh, 46 miles of permanent stream with adjacent riparian woodland, and about 1,100 acres of wet meadow (mostly associated with the marsh and riparian woodlands) on public land in the San Luis Resource Area. Animals that depend on this type include waterfowl, shorebirds, and wading birds plus a large variety of songbirds, small mammals, and furbearers.

The final habitat type, rocky cliffs and canyons, is scattered throughout the resource area, but it occupies little horizontal surface acreage. About 2,500 acres have been identified as rocky waste in the vegetative typing process. This type is important as nesting habitat for birds-of-prey such as the golden eagle and the prairie falcon. It is also important to bighorn sheep, since they depend on steep rocky slopes for escape cover.

Terrestrial Wildlife and Habitat

A detailed species list of the terrestrial fauna of the San Luis Resource Area appears in Appendix 3 of the San Luis Valley Grazing EIS. The appendix list contains all vertebrates that are known to be present in the resource area, plus those invertebrates (or groups) that are considered economically important or significant. Habitat preference, relative abundance, and seasonal occurrence (for birds only) are indicated according to the best information available.

A detail discussion of species or groups of species having or requiring specialized management follows.

Waterfowl and Wetland Habitat - The San Luis Valley has been described as the southern most major waterfowl production area in the central flyway. It is also considered the most important waterfowl production area in Colorado. Important nesting species include the Canada goose, mallard, gadwall, pintail green winged teal, cinnamon teal, and red head.

The total available waterfowl nesting habitat has decreased dramatically since 1900 due to extensive agricultural development and a continuing decrease in the level of the water table. Some of the habitat losses have been better with the development of specified management areas including the Alamosa and Monte Vista Wildlife Refuge Complex, several CDOW Management Areas, and the Blanca Wildlife Habitat Area, however the population trend appears to follow a downward trend.

Irrigation practices changed in the Valley during the mid-1970's. Many agriculturists converted from flood irrigation to sprinkler irrigation. That conversion significantly reduced the amount of flooded nesting habitat and many ditches were either destroyed or dry, further reducing production. Additionally, completion of the Closed basin Project will affect an estimated 8,460 acres of wetlands. However, these losses will be mitigated by transfer of wildlife habitat to public ownership and delivery of additional water to Blanca Wildlife Habitat Area, Alamosa National Wildlife Refuge, and San Luis Lakes Wildlife Area.

Prior to the conversion to sprinkler irrigation systems, the breeding population averaged 55,000 ducks for the Valley. These breeders produced an average of 84,000 ducks per year, although actual production ranged from 69,000 to 99,000 ducks. During that same time period estimated 4,800 breeding ducks utilizing the mountainous terrain west of the San Luis Valley floor produced an estimated 2,700 ducks per year. That area has not undergone massive habitat alteration and, therefore, is probably producing similar numbers of ducks currently.

Current population figures for the valley show virtually a 50 percent decline in the number of breeding ducks and production. The 1984 population estimate projected 15,000 breeding pairs which would produce an estimated 45,000 ducks. Harvest has mirrored the decline in duck numbers in the yaers since 1975. Harvest average about 26,000 ducks between 1970 and 1978. Since 1978, duck harvest has declined to an annual rate of approximately 16,000. An estimated 12,000 ducks winter in the Valley currently, which is a 57 percent decrease over wintering populations estimated in 1975. Valley declines have paralelled national decline in waterfowl populations over the last 10 years.

Canada geese have increased in the Valley during recent years. Currently, approximately 8,000 geese winter in the Valley, primarily in barely fields. The 1986 projected breeding population was 244 pairs, which produced an estimated 552 goslings. Goose harvest has also increased recently, along with the gradual population increase.

The Bureau's role in wetland habitat is significant in the planning area. The most important production area is the Blanca Wildlife Habitat Area. This roughly 6,000 acre area is a restoration project in an historical wetlands area estimated at 15-2o,000 continuous acres prior to its' demise in the early 1900's. Generalized statistics are presented in table 11-1. The area is 90 percent complete in construction but only 65 percent of the necessary water has been developed to date. If completed it will realize its potential in 10 to 15 years. Cooperative funding from CDOW has played a role in the development of this project and it is identified in CDOW Draft Water Plan as one of the core areas necessary for maintaining water bird production in the San Luis Valley.

Table 11-2 displays public and wetlands in the planning area. These wetland areas include Blanca Wildlife Area, the Empherous Tract, and area of 2,040 acres soon to be transferred from BR to BLM, twelve stream miles along the Rio Grande River from the Alamosa NWR to the New Mexico Line, and scattered lands adjacent to the Meoshak Lakes. In addition there are 1630 acres of historical wetlands in the Dry Lakes Areas presently out of production.

There are 46 miles of perenial streams with 1,100 acres of wet meadows associated with riparian woodlands, spring seeps, and small reservoirs that constitute the remainder of the wetland resource in the planning area.

TABLE 11-1

Blanca Wildlife Habitat Area

Present Status:	30 artesian wells (2,687 gpm) (4,326 af) 1,400 acres of wetlands 6 warm water fisheries (bass-bluegill) 17 cold water fisheries (rainbow trout) 5 combined cold and warm
Proposed Development:	42 artesian wells (3,870 gpm) (6,230 af) 34 fish ponds 214 acres) 1,875 acres of wetlands
Expected Outputs:	Goose production/year - 1,000 Duck production/year - 10,000 Fish production/year - 27,000 lb. Waterfowl use days/year - 1,333,000 Shorebird use days/year - 200,000 Bald Eagle use days/winter - 1,050
Closed Basin Mitigation:	307 af artesian/year 800 af ditch/year dikes to control 320 acre land purchase
Present studies:	Waterfowl census and production Fisheries investigations Vegetation trends Visitor use

Statistics:

	1972	1985
Goose production (to flight)	3	420
Duck production (to flight)	30	2,620
Fish stocking	200	41,700

Management Practices:

Waterfowl Propagation
1. Island Development
2. Nesting Structures
3. Water Management Facilities
4. Closure

Nongame and Endangered Species
1. Bird Boxes
2. Tree Planting
3. Perch Poles

Fisheries Propagation
1. Fish Ponds
   a. Warm Water
   b. Cold Water

TABLE 11-2
Public Land Wetlands

Area	EXISTING WETLAND (HISTORICAL OUT OF PRODUCTION WETLANDS ~~Wetlands/Potential~~		Remarks
Blanca Wildlife Habitat Area	1,400	(475)	
Empherous	200	(750)	4,200 Acre Feet of Ajudicated water from 52 Artesian Wells, presently 500 Af flowing
Flat Top	80	(80)	Irrigation Sump
Rio Grande River	12 Stream Miles	+ 80 Acres of islands and bars	Only one side of river is public land
Mishak Lakes	10	(50)	4 Artesian Wells
Dry Lakes	10	(1,630)	Possible to obtain water from CDOW or BR Closed Basin
Perenial Streams and Stock Reservoirs	1,000	(?)	Small wet meadows associated with riparian woodlands spring seeps, and reservoirs

Upland Game Birds - Sage grouse were introduced into the area of Round Hill and Swidinski Creek near Poncha Pass in the early 1970s, but they were not observed again for several years. However, two broods were observed farther east on the East Side allotment during the summer of 1974, and no subsequent sightings have occurred to the present time. Sage grouse depend on sagebrush yearlong for food and nesting cover. Nesting and brood rearing usually occur in most stream bottom areas, but no nesting locations or strutting grounds have been identified as yet. No harvest of sage grouse allowed in this resource area.

There are approximately 15,420 acres of potential sage grouse habitat of which _____ acres are public lands.

Raptors - Raptors which are yearlong residents of the San Luis Resource Area, include the prairie falcon, golden eagle, red tailed hawk, marsh hawk, great horned owl, and peregrine falcon (see subsequent section, "Endangered Species"). The Swainson's hawk and American kestrel (sparrow hawk) are common summer residents, and the rough legged hawk and bald eagle are common winter residents. The cliffs and precipitous rock formations scattered throughout the resource area are used as nesting and perching sites by the prairie falcon, golden eagle, and red tailed hawk. The Swainson's hawk, American kestrel, and great horned owl nest in trees throughout the valley.

Mule Deer - Presently, deer herds are below the carrying capacity of their range in most of the San Luis Resource Area. Localized exceptions are noted in Unit 82. As in most of the mountainous parts of Colorado, deer herds in the San Luis Valley underwent a buildup during the mid-1900s, but since then a steady loss of habitat caused by human encroachment, increase in elk herds and increasing mortality due partially to illegal harvest has reduced the herds to their present size.

Population estimates along with winter ranges, crucial ranges for each of the game management unit are presented in Table 11-3. The maximum winter deer population using public land in the resource area is presently estimated to be about 9,300. The foothills and the mountains of the San Juan and Sangre de Cristo ranges provide the primary mule deer habitat in the planning area. Deer are also present in relatively small numbers along the riparian woodlands of the Rio grande and the Conejos River in the valley bottom, but they are not considered significant to the resource area deer population. Public lands in the San Luis Resource Area are extremely important as winter range for deer, as 66 percent of the herd is dependent on it. Fifteen percent are year long residences while the remainder spend the warmer months at higher elevations on the Rio Grande National Forest. Deer use this winter range for an average of about six months each year (November though April).

The vegetative type of those areas which have been identified as crucial or important deer winter range is mostly a mixed woodland of mountain browse, pinyon-juniper, and coniferous forest, depending upon the slope and the aspect. South facing slopes at moderate elevations (8,000 to 9,000 feet) are normally the crucial portions of the winter range.

There are 219,964 acres of crucial winter range identified for mule deer in the planning area.

TABLE 11-3

Winter Habitat Deer Populations 1985 to 1986

DOW Unit Number	1/Deer In Number Winter Unit	Total Acres Winter Range	BLM Winter Range	No Crucial Areas/ Acres Crucial Areas	Acres BLM Crucial	Number Deer Winter BLM	Remarks
68	2,200	121,078	-	2 / 11,706	-	1,525	15 percent
681	2,600	117,649	-	2 / 34,642	-	1,800	Deer popula-
(76)79	2,000	46,325	-	2 / 2,994	-	750	tion on
80	2,000	149,515	-	1 / 75,660	-	1,450	public land
81	2,400	307,593	-	4 / 52,220	-	1,750	year round
82	2,700	124,292	-	2 / 42,741	-	2,025	
	13,900	866,452	-	12 / 219,964	-	9,300	

1/ 1985 Post Hunt Data and CDOW.

Elk - Elk Populations have generally been stable in the valley during the past 10 years population estimates for each of the game management units are shown in Table 11-4. The maximum winter elk population on public lands in the resource area is 5,600. this is roughly 53 percent of the total wintering elk herd in valley. Approximately 5 percent of the herd reside on public lans year long.

Elk winter range and crucial winter range for all game management units are also shown in Table 11-4. Public lands provide mainly winter range for elk as the moist aspen coniferous forest required during other seasons is only present in limited quantities. Elk use this winter range for a maximum of about five months each year (December thru April). There are 345,622 acres of crucial winter range of which _____ are public lands identified for elk in the planning area. Most crucial areas for elk overlap crucial deer areas.

Pronghorn Antelope - Pronghorn populations have been increasing slightly over the past 10 years. Population estimates for seven game management unit are shown in Table 11-5. Antelope are year long residents of the public land. Peak populations approach 2,900 during the summer months and after natural mortality and harvest, approximately 2,300 winter on public lands.

Antelope habitat in the planning area is generally the mixed brush grassland vegetative type, which forms a broad belt around the valley at the base of the mountains. The lower boundary of the habitat is either cultivated farmland or dense greasewood shrubland and the upper boundary is within the lower edge of timberland. It is considered significant that antelope in the San Luis Valley and other high mountain parks in Colorado spend considerable time in the lower fringes of the timber type.

TABLE 11-4

Winter Elk Habitat and Populations 1985 to 1986

DOW Unit Number	1/Elk In Number Winter Unit	Total Acres Winter Range	BLM Winter Range	No Crucial Areas/ Acres Crucial Areas	Acres BLM Crucial	Number Elk Winter BLM	Remarks
68	1,100	106,543	-	2 / 57,279	-	700	5 percent
681	1,500	116,687	-	2 / 78,188	-	950	Elk popula-
(76)79	3,500	19,954	-	1 / 3,043	-	1,150	tion on
80	2,000	105,948	-	1 / 103,165	-	1,100	public land
81	2,400	171,662	-	1 / 78,367	-	1,300	year round
82	500	105,029	-	2 / 25,639	-	375	
	10,500	625,823	-	9 / 345,622	-	5,575	

1/ 1985 Post Hunt Data and CDOW.

TABLE 11-5
Antelope Habitat and Populations 1985

DOW Unit Number	Peak Populations Utilizing Public Land	Total Winter Range (Acres)	BLM Winter Range	Number Crucial Areas/ Acres Crucial Areas	Acres BLM Crucial	Number Antelope Winter BLM	Remarks
A73	340	144,108	-	3 / 56,177	-	235	
A74	1,050	162,583	-	4 / 87,087	-	880	
A76	320	45,112	-	1 / 18,228	-	245	
A77	350	101,866	-	1 / 32,739	-	255	
A78	150	29,719	-	0 / 0	-	125	
A79	610	133,412	-	3 / 42,410	-	450	
A80	100	106,436	-	0 / 0	-	85	
	2,930	723,236	-	12 / 236,641	-	2,275	

Antelope seasonal ranges, crucial ranges and management units are also shown on Table 11-5. There are 69,650 acres of crucial kidding range and 199,827 acres of crucial winter ranges identified in the planning area. Periodic hard winters are a major limiting factor on all antelope populations in the valley.

Bighorn Sheep - Bighorn sheep populations have increased on the past decade with the exception of Unit S-10 which suffered a lung worm die off in 82-83. Population estimates for four management units are shown in Table 11-6. Winter range, crucial winter range and crucial lambing areas are also shown on Table 11-6. There are approximately 460 Bighorn sheep wintering on public lands and possibly 300 dependent on public lands year round.

Summary Big Game - There are approximately 17,600 big game animals on public land winter range in the planning area. Crucial area overlaps are extensive between species where as all four species may be dependent on the same area of range. An estimated 48,600 AUMs yearly is consumed by big game of which 38,000 is consumed in the winter Table 11-7.

TABLE 11-6

Sheep Habitat and Populations 1985

DOW Unit Number	Peak Populations Utilizing Public Land	Total Winter Range (Acres)	BLM Winter Range	Number Crucial Areas/ Acres Crucial Areas	Acres BLM Crucial	Number Sheep Winter BLM	Remarks
S10	350	97,939	-	8 / 51,635	-	350	All BLM year year long range. Crucial lambing areas
Natural Arch.	75	3,624	-	1 / 3,264	-	30	Result of a transplant in ___ herd is expanding
S29N	85	7,371	-	2 / 7,371	-	50	Result of a transplant in 1978 herd is expanding
S29S	60	3,163	-			30	Result of transplants in 1978 and 1983 herd is expanding
	570	112,097	-	12 / 65,793	-	460	

TABLE 11-7

Forage Consumption By Big Game (A.U.M.s) On Public Land

Name	Winter	Other Seasons	Total
Elk	28,000	3,675	31,675
Deer	7,680	3,336	11,016
Antelope	1,625	2,600	4,225
Sheep	766	700	1,466
	38,071	10,311	48,382

Threatened and Endangered Species of Special Concern

A list of threatened or endangered species of the San Luis Resource Area is compiled in Table 11-8.

The endangered listing includes 3 species whose presence is confirmed, 1 species whose presence is a possibility, and an additional 5 species whose presence is hypothetical.

There is a possibility that the endangered black-footed ferret is present on public land within the San Luis Resource Area. An experienced employee of the U.S. Fish and Wildlife Service has made unconfirmed observations of ferrets in the Punche Valley and the flat top-Magote areas in the southern half of the San Luis Resource Area. Copies of correspondence regarding recent ferret investigations in these areas and a chronological listing of ferret observations in the San Luis Valley are included in Appendix 3 of the San Luis Valley Grazing EIS. All are in association with prairie dog towns. Total habitat for these 2 areas is 66,200 acres.

The American peregrine falcon is one of three endangered birds that are inhabitants of the planning area. The peregrine falcon is a rare yearlong resident, but there are no known nesting eries on public lands. At least one active peregrine erie is on national forest lands in the Conejos River drainage, and although there are several potential nesting sites on public lands within the resource area there are no historic eries on record or is any of the habitat considered primary habitat.

The endangered whooping crane is in the San Luis Valley as a result of an experiment being conducted by the U.S. Fish and Wildlife Service. Eggs taken for the one remaining whooping crane nesting area in Canada were placed under greater sandhill crane foster parents at Gray's Lake National Wildlife Refuge in Idaho in an attempt to establish a separate flock of whooping cranes. The sanhill crane foster parents are part of a large flock that uses the San Luis Valley as an important stop during spring and fall migrations. Twenty-four whooping cranes were observed in the San Luis Valley during the fall 1985 and the spring 1986 migrations.

Whooping cranes utilize marsh and wet-meadow habitat. In addition, open farm fields are also used because of the influence of the Sanhill Cranes that the Woopers travel with. Although Sandhill Cranes utilize the Blanca WHA and as loafing areas on public lands, whooping crane use of public lands is insignificant at this time. The Alamosa and Monte Vista F.W.S. refuge complex is officially designated as critical habitat for Wooping Cranes.

TABLE 11-8

Endangered and Threatened Wildlife of the San Luis Resource Area

Common Name	Scientific Name	Status and Comments 1/
Mammals		
Black-footed Ferret	Mustela nigripes	E, C Unconfirmed sightings
Grizzly Bear 2/	Ursus horribilis	T
Gray Wolf 2/	Canis lupus	C
Wolverine 2/	Gulo luscus	C
River Otter 2/	Lutra canadensis	C
Birds		
American Peregrine Falcon	Falco peregrinus anatum	E, C - Rare yearlong
Whooping Crane	Grus americana	E, C - Rare migrant
Bald Eagle	Haliaeetus leucocephalus	E Common winter
Greater Sandhill Crane 3/	Grus canadensis tabida	C -Abundant migrant

1/ Status:

E = Endangered, threatened with extinction official list as published in Federal Register through 7/83

C = Declared endangered or threatened in Colorado by Colorado Wildlife Commission, 7/74

2/ Presence is hypathetical-within original distribution but no recent evidence

3/ Only the nesting population is considered endangered in Colorado.

The endangered Bald Eagle is a common winter resident of the planning area and populations peaks of 300 have been documented. The valley is considered one of the most important winter concentration areas in Colorado. Primary habitat areas on public lands utilized include 12 miles of the Rio Grande and associated riparian and the Greenie Mountain Roost Area (200 acres).

The following listing are Category 2 Species (proposed for listing as TORE) whose range includes the planning arch.

White-faced Ibis	Plegadis chihi
Western Snowy Plover	Charadrius alexandrinus
Long-billed Curlew	Numenius americana
Mountain Plover	Charadrius Montanos
Swainson's Hawk	Buteo Swainson
Ferruginous Hawk	Buteo regalis

With the possible exception of the first 2 species affinity for wetlands none of these birds are known to have primary or localized habitat on public lands in the planning area. Both the Ibis and the snowy plover are considered uncommon on valley wetlands but have been recorded as nesting here.

The following listing show selected groups of animals determined to be "Species of Special Concern" by the Colorado Division of Wildlife that are known to reside in the planning area:

Fish

Rio Grande Cutthroat Trout	Restrictive population with ecological value
Rio Grande Suckel	Restrictive population with ecological value
Rio Grande Chub	Restrictive population with ecological value
Bullhead Minnow	Lack of population data, scientific value
Rio Grande Shiner	Lack of population data, scientific value

Amphibians

Bull Frog	Impact on anticipating other species
Western Toad	Large decline in population
Northern Leopard Frog	Large decline in population

Mammals

Cave using Bats:

Plecotus Townsend Townsend's Big-eared Bat Myotis leibii Small-footed Myotis Tadarida brasiliensis Brazilian Free-tailed Bat	The cave bats, especially the ones listed, are of concern because of human disturbance to their limited roosting habitat.

Cynomys Gunnison Gunnison's Prairie Dog	Ferret habitat; their involvement in plague ecology, agricultural and urban concerns, and their general scientific and aesthetic appeal. The subspecies C. Gunnison Gunnison has also experienced significant range reduction which should be documented.
Abert's Squirrel	This species is of concern because of its discontinuous distribution in ponderosa pine forest.
Brush Mouse	The biology of this species is not well understood. It is lacking over significant areas of what seem like suitable habitat.
Mink	The status of the Mink in Colorado is poorly known - populations appear to be widespread but in low numbers. As a furbearing mammal its biology should be better understood.
Black Bear	Populations of Black Bear are declining in parts of Colorado. The present status of the species and the impact of liberal hunting seasons are of concern.
Mountain Lion	The Mountain Lion is a species about which little data have been gathered (recognizing that limited research is ongoing in western Colorado). As a hunted species it should be given more research attention; management should be based on such data.
Bobcat	The population status and management of Bobcat should be reviewed. Some local populations have suffered from over harvest. More research and a stronger management plan should be devised for this animal.

Birds

Species	1/ Rankings of Selection Criteria (1 = low, 10 = high)					
	A	B	C	D	E	Total
Eared Gebe	6		8	7		21
Western Grebe	4		7	7		18
American Bittern	8		9	7		24
Great Blue Heron	3		4	7	3	17
Snowy Egret	5		5	6		16
White-faced Ibis	5		5	6		16
Prairie Falcon	6		5	8	5	24
Snowy Plover	10		3	10		23
American Aveocet			1	6	2	9
Flammulated Owl	3		4	8	3	18
Burrowing Owl	2		6	9		17
Canyon Wren	4		8	3		15
American Dipper			5	8	5	18
Mountain Bluebird	5		6	8		19
Loggerhead Shrike	6		7	5		18
Savannah Sparrow	4		8	5		17
Yellow-headed Blackbird	4		4	8		16

1/ = Rankings of Bird Species of Special Concern

Selection criteria for species of special concern:

A) currently small or declining populations;

B) currently large or increasing populations which may impinge negatively on other species;

C) inadequate population information;

D) special ecological value (keystone species, indicator species, etc.); and

E) special educational, scientific, or recreational value

Aquatic Wildlife and Habitat

The greatest portion of surface waters on public lands is found in flowing streams, with only a small fraction retained in ponds and reservoirs. Approximately 60 percent of the total water income to the valley comes via streams that flow out of the surrounding San Juan and Sangre de Cristo mountains. The majority of these streams sink into the porous alluvial materials bordering the mountains and terminate on or before reaching public lands. The Regional Development and Planning Commission publication (1972) cites flow data from Deadman creek in the northwest region of the valley. A volume of 7 cubic feet per second (cfs) was found where Deadman Creek first emerges onto the alluvial material; this volume dropped to 1 cfs within 3.7 miles and disappeared entirely within 8 miles. The lengths and volumes of these ephemeral streams then depend mainly upon source flow and substrate porosity. During snowmelt and summer thundershowers, these streams may reach miles out onto the valley floor and within a few weeks shrink bakc into national forest lands.

There are presently 46 miles of permanent streams and approximately _____ surface acres of permanent reservoirs on public lands in the planning area. Ninety Eight percent of the permanent ponded waters occur on the Blanca WHA.

Most streams support a minimum sport fishery and all are cold water fisheries with the exception of the Rio Grande which also supports some Cool water species. Of the 400 acres of ponds and reservoirs 188 acres provide sport fisheries and these are confined to the Blanca WHA. A combination of both warm and cold water fisheries are provided in these ponds due to an artesian water supply.

Numerous springs and seeps are found throughout the foothill areas of the Sangre de Cristo and San Juan mountains on NRL. These isolated wet areas, surrounded by inhospitable aridity, are havens for remnant populations of aquatic plants and animals that were once more widely distributed during wetter periods. As swamps and lakes began drying up, these organisms retreated to smaller and still smaller areas until presently they are found only in small, isolated localities. Most common remnant species involve snails, amphipods, isopods, mites, fish, and plants (Cole 1966, Taylor 1968). The potential for discovering a new species within these groups, endemic to the San Luis Valley, is quite high. However, no survey of the biota of existing springs and seeps in the valley have been made to date, and more specific information is therefore lacking.

Condition and Trend

Terrestrial Wildlife and Habitat

Waterfowl - Overall planning area waterfowl populations and habitat have been decreasing over the past decade, Table 11-9 displays public land wetland areas condition and trend.

TABLE 11-9

Public Land Wetland Areas Condition and Trend

Area	Wetland Acreage	Condition	Trend	Remarks
Blanca WHA	1,400	Fair-good (475 historic undeveloped acres)		Under HMP but most funding has delayed both maintenance and development
Empherous	200	Fair-poor (750 out of production acres)		Acquired surplus property from the BR closed basin project has water rights capable of 950 acres but requires redevelopment
Flat Top	80	Poor		No management at present time, water source is no control irrigation return flows
Rio Grande River	7 Miles 5 Miles	Poor Good		Over grazed by trespass cattle (only western side of river is public land)
Mishak	10	Poor (50 out of production acres)		Decreasing well flows and unprotected from livestock
Dry Lakes	10	Poor (1630 historic out of production acres)		Depleted well flows. Loss of historic natural flows
Perenial Streams	1,100	Fair-good		Improvement thru implemented AMPs

Elk - Elk populations have been stable over the past ten years, held in check by harvest regulations. Habitat conditions are fair and stable with some improvement. There appears to be a trend of increased elk use at lower elevation ranges. Table 11-10 displays elk population and habitat trend for each elk management unit.

Mule Deer - Deer herds have continued in a slight downward trend or stable at best except in units 68 and 681 were some increases have been observed over the past ten years. This trend has continued despite effort to increase deer with restrictive hunting seasons. Habitat though averageing fair has remained stable. Elk herds at their present levels and on overlapping winter ranges may be a large factor limiting mule deer numbers. Table 11-11 displays deer population and habitat trend for the game management units in the planning area.

Pronghorn Antelope - Antelope population has increased slightly over the planning area in general, although several populations have shown considerable fluctuation. Antelope habitat is believed to be in satisfactory condition and stable over their range. Water availability may be limiting use on ranges along the western side of the valley. Some sheep wire fencing is impeding movement in Units A76, A77, and A80 Table 11-12 display antelope population and habitat trend per game management unit.

Bighorn Sheep - Sheep populations have generally increased over the planning unit with the exception of Unit S10 habitat is in a stable condition. Table 11-13 displays habitat and population tend for the four sheep management units.

TABLE 11-10
Elk Population and Habitat Trend

DOW Unit Number	Habitat Condition	Habitat Trend	10 Year Population Trend	Remarks
68	Fair	-	-	
681	Fair	-	-	Cover is limited in quality because of timber harvest techniques
(76)79	Fair	-	-	
80	Fair	-	-	
81	Fair	-	-	
82	Fair	-	-	Vehicle disturbance is a problem in open winters on ECW

TABLE 11-11
Deer Population and Habitat Trend

DOW Unit Number	Habitat Condition	Habitat Trend	10 Year Population Trend	Remarks
68	Fair	-	-	Browse condition good in east half DCW - and all DCW
681	Fair	-	-	
(76)79	Fair	-	-	
80	Fair-Good	-	-	Vehicle disturbance is a problem on DCW
81	Fair	-	-	Vehicle disturbance is a problem in open winters on DCW
82	Fair	-	-	Browse stands are generally unsatisfactory in much of this unit

TABLE 11-12
Antelope Population and Habitat Trend

DOW Unit Number	Habitat Condition	Habitat Trend	10 Year Population Trend	Remarks
A73	Fair	-	-	Water distribution inadequate
A74	Good	-	-	in Bidell-Tracey area
A76	Fair	-	-	Some net wire impeding
A77	Fair	-	-	movement
A78	Good	-	-	Small unhunted population
		-	-	winter habitat is limiting factor
A79	Good	-	-	
A80	Fair	-	-	Small unhunted population Poaching is the limiting factor - Some new wire impeding movement

TABLE 11-13
Sheep Population and Habitat Trend

DOW Unit Number	Habitat Condition	Habitat Trend	10 Year Population Trend	Remarks
S10	Fair	-	-	Lung Worm die off in 1982 Some Livestock competition on on key foraging
Natural Arches	Fair			
S29N	Fair			
S29S	Fair			

Threatened and Endangered Species

Endangered species primary habitat is presented in Table 11-14.

TABLE 11-14

Endangered Species and Habitat Trend

Species	Population	Habitat	Remarks
Black -footed Ferret	?	-	Gunnison prairie dogs have notable declined in the past decade due to plague
Bald Eagle			Decline of suitable roost trees and hunting perches on the valley floor

Aquatic Wildlife and Habitat

Aquatic habitat condition and trend for 37 miles of selected streams and _____ surface acres of pond is described in Table 11-16.

Table 11-16
Aquatic Condition and Trend on
Selected Aquatic Resources in SLRA

Name	Miles or S.A.	Aquatic Community	Stability Rating	Game Species Present
Lower Ford Cr.	1.5 mi.	Poor	Declining	Bt, C, RG
Middle Ford Cr.	0.5 mi.	Good	Declining	Bt, C, RG
Upper Ford Cr.	1.0 mi.	Good	Improving	Bt
Baxter Cr.	1.5 mi.	Poor	Declining	Unknown
Lower Tuttle Cr.	1.0 mi.	Good	Improving	Bt, RG
Upper Tuttle Cr.	1.0 mi.	Fair	Improving	RG
Lower Sheep Cr.	0.3 mi.	Excellent	Improving	Bt, B, R
Upper Sheep Cr.	1.7 mi.	Excellent	Stable	Bt
Hat Springs Cr.	1.8 mi.	Poor	Declining	Unknown
Cross Creek	0.5 mi.	Good	Stable	Bt
Kerber Creek	0.5 mi.	Poor	Declining	Nonexistent
Fisher Creek	0.5 mi.	Poor	Stable	Nonexistent
Middle San Luis Cr.	0.4 mi.	Fair	Improving	Bt
Upper San Luis Cr.	0.6 mi.	Good	Stable	Bt
Dorsey Creek	0.5 mi.	Good	Improving	Bt
Middle Garner Cr.	0.3 mi.	Fair	Stable	Bt
Lower Garner Cr.	1.7 mi.	Fair	Improving	Bt
Upper Garner Cr.	0.3 mi.	Good	Stable	Bt
Rio Grande (A)	7.0 mi.	Good	Stable	B, NP, CC
Rio Grande (B)	5.0 mi.	Good	Stable	B, NP, CC
La Jara Creek	2.5 mi.	Good	Improving	R, Bt
Alamosa River	2.0 mi.	Good	Stable	B, R, C
Alder Creek	0.4 mi.	Good	Stable	Bt
Rito Alto Creek	0.3 mi.	Good	Stable	Bt
Cotton Creek	0.8 mi.	Excellent	Stable	Bt, R, C
Black Canyon Cr.	0.8 mi.	Excellent	Stable	Nonexistent
Quary Cr.	0.3 mi.	Excellent	Stable	Bt
Lower Raspberry Cr.	0.5 mi.	Fair	Stable	Bt
Upper Raspberry Cr.	0.5 mi.	Excellent	Stable	Bt
Eaglebrook Gulch	0.6 mi.	Fair	Declining	Bt
Saguache Cr.	0.3 mi.	Excellent	Stable	R, B, C, Bt
Spanish Cr.	0.3 mi.	Excellent	Stable	Bt
Rock Cr.	0.2 mi.	Excellent	Stable	Bt, R, C
Honker Fish Pond 1	1.0 S.A.	Poor	Declining	R
Honker Fish Pond 2	7.2 S.A.	Good	Stable	LB, BG
Honker Fish Pond 3	6.0 S.A.	Fair	Declining	R
Honker Fish Pond 4	4.0 S.A.	Poor	Stable	Nonexistent
Honker Fish Pond 5	8.0 S.A.	Poor	Stable	Nonexistent
Honker Fish Pond 7	1.5 S.A.	Good	Stable	R
Heron Fish Pond	10.0 S.A.	Poor	Declining	Nonexistent

Table 11-16 (Continued)

Name	Miles or S.A.	Aquatic Community	Stability Rating	Game Species Present
Chico Fish Pond	3.5 S.A.	Fair	Declining	R
Pintail Fish Pond	1.0 S.A.	Fair	Improving	R
Snipe Fish Pond	3.0 S.A.	Poor	Declining	Nonexistent
Widgeon Fish Pond	8.0 S.A.	Fair	Improving	R
Aveocet Fish Pond	18.0 S.A.	Fair	Stable	R
Alkali Fish Pond	16.0 S.A.	Good	Improving	R, LB, BG
Axel Fish Pond 1	2.2 S.A.	Good	Stable	LB, BG
Axel Fish Pond 2	0.8 S.A.	Good	Stable	R
Axel Fish Pond 3	1.0 S.A.	Good	Improving	R
Axel Fish Pond 4	3.2 S.A.	Good	Stable	R
Axel Fish Pond Marsh 4	12.0 S.A.	Good	Declining	LB, RG
Axel Fish Pond 5	2.5 S.A.	Poor	Declining	Nonexistent
Axel Fish Pond 6	8.5 S.A.	Poor	Stable	Nonexistent
Mallard Fish Pond 1	1.0 S.A.	Good	Stable	R
Mallard Marsh Fish	14.0 S.A.	Good	Declining	LB, BG
Mallard Fish Pond 2	9.0 S.A.	Poor	Declining	Nonexistent
Mallard Fish Pond 3	1.0 S.A.	Fair	Stable	R
Mallard Fish Pond 4	3.5 S.A.	Fair	Stable	R, BG, LB
Mallard Fish Pond 5	29.0 S.A.	Fair	Declining	LB, BG
Mallard Fish Pond 6	0.8 S.A.	Good	Stable	R
Mallard 6 Fish Pond 2	2.0 S.A.	Fair	Stable	R, LB, BG
Mallard Fish Pond 7	0.8 S.A.	Good	Stable	R
Mallard 7 Fish Pond 2	1.5 S.A.	Poor	Stable	LB, BG

Note: Species Are

Bt - Brooktrout
B - Brown trout
R - Rainbow trout
C - Cutthroat trout
RG - Rio Grande Cutthroat trout
CC - Channel catfish
NP - Northern pike
LB - Largemouth bass
BG - Bluegill

EXISTING MANAGEMENT SITUATION

Current Management

General

Current wildlife management in the planning area is based primarly as a support function to the range management program as outlined in the San Luis Resource Area Grazing EIS, and habitat improvement programs as specified in the Blanca Wildlife Area Habitat Management Plan, the Trickle Mountain Habitat Management Plan, and the Bald Eagle Recovery Plan for Colorado. Specific wildlife improvement projects are kept to these areas except for most urgent cases or where funds and momentum are derived from outside sources. The San Luis Resource Area Oil and Gas Leasing Umbrella Environmental Assessment applies seasonal and no surface occupancy rules to locations where specified wildlife are in a vulnerable location. _____ acres are enclosed by these protections. The imperative to manage for minimal impact to the wildlife resource is facilitated by wildlife review and recommendations to other resource development plans.

Terrestrial Wildlife

Waterfowl - While there are and array of opportunities current active management of wetlands is limited to priority maintenance, mitigation features, and limited operation of the Blanca Wildlife Habitat Area (see Table 11-9). Improvement and restoration of wetlands is a highly expensive venture which has become overwhelming at current budget levels. CDOW goals for waterfowl is to increase waterfowl production to the mid-1970 levels of 56,000 breeding pairs producing 84,000 ducks..

Big Game - There is a consensus between the BLM and the DOW that generally winter range for elk is at its carrying capacity and that the present elk populations may be acting as the limiting factor for deer populations in most units. The Division of Wildlife is presently using harvest regulations to control elk numbers at present levels in all units. The division has and continues harvest regulations, e.g., short seasons, buck only, to allow deer to expand in all units with minimal results. Pronghorn numbers are being held at their present levels thru harvest in the two major management units and being encouraged to expand in all others. Bighorn Sheep populations will be stabilized at or below present levels on the S10 Unit due to lung worm problems. Most all other sheep occupied habitat is on Forest Service Lands. Big Game damage claims are presently insignificant in the planning area.

Present Big Game habitat management is in a maintenance phase for most all management units. Specific goals are incorporated in the allotment management plans as specified in the grazing EIS and monitored as the plans are implemented. Habitat protection e.g., "Space" through seasonal closures to livestock and recreation or other activities on critical ranges or the ORV closure on the Trickle Mtn. Wildlife Habitat Area play an extremely important role in maintaining existing wildlife populations.

Threatened and Endangered Species

Protective stipulations, e.g., no surface occupancy seasonal closures ect., upon other developing resources and in inventories, e.g., bald eagle counts and identifying use areas, have formed the bulk of management for these species over the last decade.

Active management has been limited to the bald eagle in the form of attempting to restore, the riparian gallery on the lower Rio Grande River and wetland management. These efforts are being persued with the cooperation of the Colorado Forest Service and the CDOW. Other efforts include a modification of the Blanca Wildlife Habitat Area to incourage use of wintering bald eagles.

Aquatic Wildlife

Current management of aquatic resources have been limited on public lands. Management completed or in the process of, consist of establishing baseline data on selected streams to express other resource impacts through macro invertebrate analysis, project work (Blanca Wildlife Habitat Area), and limited monitoring.

Projects completed have consisted of fish ponds, wells, and manipulation of aquatic vegetation. Each year declining budgets have limited the ability to develop these resources and have severely curtailed the capability to maintain what has been developed.

Monitoring for the most part has been tied to the Blanca Wildlife Area. It has been directed to the success or lack of stocking fish and their establishment in the wildlife area. other programs have included monitoring riparian enclosures and the establishment of native fauna back into Tuttle Creek (see Table 11-16).

Supply-Demand Analysis and Dependency

Terrestrial Habitat

Waterfowl Habitat - As noted in the resource profile present demand far exceeds the supply and the supply is decreasing over the planning area. As the wetlands resources and dwindling on private lands. Public lands are being called upon to improve existing habitats and restore historic habitats. The acquisition of private lands to public ownership is already a realty and will accelerate. This situation concerning wetlands is not confined to the planning area but is both a regional and a national issue of significance. The species of concern is not limited to waterfowl but covers a mirad of species dependent on wetland habitats to meet their biological needs. Public lands have the resources to be a significant factor in wetlands management in the planning area.

Big Game Habitat - Table 11-17 displays the recreational days expended on big game in 1983. As deer and elk harvests are unrestricted as to the number of hunters present demand may be met for these species but the quality of these units (days to harvest an animal) is below the state average of all GMUs. Based on the limited licenses available for antelope the demand is roughly 5 times the supply and for Bighorn Sheep the statewide ratio is 6 to 1 in the public drawings.

The dependency of the total populations of planning area herds on public land winter range are 80 percent for antelope, 80 percent for bighorn sheep, 66 percent for mule deer, and 53 percent for elk. Almost 80 percent of the antelope 37 percent of the Bighorn Sheep 15 percent of the mule deer and 5 percent of the elk utilize public lands for year round habitat.

CDOW Strategic Plan Objectives for the period 1983 - 1988 for big game management units are listed in Table 11-17.

TABLE 11-17
Hunter Recreation Days (CDOW)

	Total P.A.	1/ Attributed to BLM
Elk	96,200	50,986
Deer	36,041	23,787
Antelope	1,331	1,065
Sheep	386	170
Total	133,958	76,018

1/ Based on percent herd wintering on BLM
Source: CDOW Big Game Harvest Statistics 1983

TABLE 11-18
GMU Stragic Plan Objectives 1988

Species	GMU	Present Numbers	Method
Elk	68-681	Hold	Harvest
	76-79	Hold	Harvest
	80-81	Hold	Harvest
	82	Increase 8 percent	Harvest
Deer	680-681	Increase 19 percent	Harvest
	76-79	Hold	Harvest
	80-81	Increase 19 percent	Harvest
	82	Increase 30 percent	Harvest
Antelope	A73	Hold	Harvest
	A74	Increase 45 percent	Increase water dist
	A76	22 percent decrease	Harvest
	A77	Increase 9 percent	Harvest
	A78	No harvest	Protection
	A79	Hold	Harvest
	A80	No harvest	Protection
Bighorn Sheep	S10	Decrease 33 percent	Harvest-trap & transplant
	S29N	Increase	Protection
	S29S	Increase	Protection
	Natural Arches	Increase	Protection

Source: CDOW D.A.U. objectives

Demand trends indicate consumptive and noncomsumptive use of wildlife will increase and could even exceed supply. Pressure to improve and expand winter range on public lands will become significant if private range land in critical areas are lost to development.

Threatened and Endangered Species

These species are not to be viewed under the law of supply and demand.

Aquatic Habitat

The amount of fishing on public land waters is insignificant when compared to the planning area; however, some fair quality trout fisheries do exist. Warm water fisheries are insignificant when compared to cold water fisheries, yet an estimated 90 percent of this type of fishery available in the planning area is confined to public lands on the Blanca Wildlife Habitat Area which makes them a "unique" feature.

Demand trend for the planning area indicate that fishing pressure will increase beyond the supply and public land managers will be called upon to improve habitats in marginally productive streams, ponds, and lakes.

CAPABILITY ANALYSIS

The following forms describe the Resource Capability Levels (RCLs), the management prescription for each RCL, and the specific lands which fall under each category.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Wildlife (Terrestrial-Aquatic) Specialist Name John Schwarz

Date 2-27-87

Resource Capability Level 1 (define the highest priority for management)

- Wetland Restoration and Management

- Crucial areas as defined for:
  Mule Deer
  Elk
  Bighorn Sheep
  Antelope

- Warm Water Fisheries
- Rapter Nest Sites

Resource Capability Level 2 (define the second highest priority for management)

Areas of relatively high potential for improvement or protection:

- Cold water fisheries, all
- Rapter nest sites and specilize habitat areas
- General big game winter range and year long range

Resource Capability Level 3 (define the third highest priority for management)

Areas of relatively low potential for improvement or protection due to habitat capability, land ownership pattern or heavy human use.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Wildlife (Terrestrial-Aquatic)

Specialist Name John Schwarz Date 2-27-87

Describe the types of management that you would use in RCL 1 areas

- Wetlands
  Management of existing wetlands and restoration of historic wetlands.

- Big Game Crucial Areas
  Timber management modifications to establish satisfactory cover requirements.
  Livestock management modifications to assure forage availability and useability for existing big game populations.
  Monitor for habitat use, condition and trend.

- All RCL 1 Areas
  Protective stipulation including seasonal restrictions and no surface occupancy where appropriate.
  Land acquisition or trades for effective management or expansion.
  Conflict resolution in favor of wildlife resources.
  Habitat management plans as necessary.

Describe the types of management you would use in RCL 2 areas

- Mitigate impacts through avoidance or extensive rehabilitation.
- Water source maintenance and redevelopment.
- Maintain existing cold water stream fisheries.
- Maintain and improve riparian, water shed and range conditions.
- Selective monitoring of wildlife habitat use.
- Expansion of warm water fisheries.

Describe the types of management you would use in RCL 3 areas

Standard stipulations applied to other resource development.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name John Schwarz Area Number (from GIS Theme) _____

Resource Terrestrial Wildlife RCL (i.e., 1, 2 or 3) 2

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

	GIS attribute description	Acres Public
Occupied big game winter range.	All big game themes	
	0.	

Rationale for RCL

Winter range is a limiting factor on a resource with an increased demand projection.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name John Schwarz Area Number (from GIS Theme) _____

Resource Terrestrial Wildlife RCL (i.e., 1, 2 or 3) 3

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

All public lands outside RCL 1 and 2.

Rationale for RCL

Low potential for improvement or protection.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name John Schwarz Area Number (from GIS Theme) _____

Resource Terrestrial Wildlife RCL (i.e., 1, 2 or 3) 2

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

Rapter nest sites and specialized rapter nesting areas.

GIS Attribute Description ?	Acres

Rationale for RCL

Rapter are high profile, high interest species, their specialize habitat in this area is geomorphic and an important habitat type for a variety of species dependent on it.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name John Schwarz Area Number (from GIS Theme) _____

Resource Aquatic Wildlife RCL (i.e., 1, 2 or 3) 2

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

Prennial streams cold and warm water pond and resevoir fisheries.

GIS Attribute Description ?

Acres _____

Rationale for RCL

Limited capability area with projected increased demands. Warm water fisheries are unique to the planning area.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name John Schwarz Area Number (from GIS Theme) _____

Resource Terrestrial Wildlife RCL (i.e., 1, 2 or 3) 1

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

Crucial areas as defined for,	GIS Attribute Description	Acres Public
Mule deer Elk Big horn sheep Antelope	0.CW/ 0.CL/ All 0.CF/	_____

* There is considerable overlap of crucial areas between speers to the extent that one area may be crucial to all four species.

Rationale for RCL

Big game populations are extremely dependent on public lands for winter survival and winter habitat is the major limiting factor to population size.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name John Schwarz Area Number (from GIS Theme) _____

Resource Terrestrial Wildlife RCL (i.e., 1, 2 or 3) 1

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

Waterfowl production - wetland restoration

GIS Attribute Description	Acres Public
O.CP/ H.PL/ All	_____

Rationale for RCL

Wetlands are of local, regional and natural significance.
These areas are primary habitats for both sensitive and economically important species.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Wildlife T & E Species Specialist Name John Schwarz

Date 2-27-87

Resource Capability Level 1 (define the highest priority for management)

Primary use habitat for endangered species.

Bald Eagle

Resource Capability Level 2 (define the second highest priority for management)

Primary habitat for the endangered species:

Black footed ferret

Resource Capability Level 3 (define the third highest priority for management)

Primary habitat for candidate Category 2 species:

White faced Ibis
Snowy Plover

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Wildlife T & E Species

Specialist Name John Schwarz Date 2-27-87

Describe the types of management that you would use in RCL 1 areas

1 Protective stipulations including seasonal restrictions and no surface occupancy where appropriate on activities that are likely to interupt some biological process of the species during critical periods.

2 Identify habitat improvement and protection projects and implement them.

Describe the types of management you would use in RCL 2 areas

Protective stipulations necessary to maintain the integrity of the habitat until species presence or lack of presence is established.

Describe the types of management you would use in RCL 3 areas

Management would concentrate on other wildlife species in this habitat type while expecting new information as to the species classification. This particular RCL is also defined as an RCL 1 under Terrestrial and Acquatic Species.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name John Schwarz Area Number (from GIS Theme) _____

Resource T & E Wildlife RCL (i.e., 1, 2 or 3) 1

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

Bald Eagle primary habitat.

GIS attribute description	
BE.CW	12 Stream Miles
BE.R	200 ac.

Rationale for RCL

Primary habitat.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name John Schwarz Area Number (from GIS Theme) _____

Resource T & E Wildlife RCL (i.e., 1, 2 or 3) 2

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

	GIS Attribute Description	Acres
Blackfooted ferret Habitat	BF.P	66,200

Rationale for RCL

Primary habitat for the Blackfooted ferret.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name John Schwarz Area Number (from GIS Theme) _____

Resource T & E Wildlife RCL (i.e., 1, 2 or 3) 3

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

All wetlands.

GIS Attribute Description	Acres
O.CP/(All)	_____

Rationale for RCL

Primary habitat for Category II species:

Whitefaced Ibis
Snowy Plover

DATA THEMES

The following is given by attributes a description of the GIS themes. (Need to discuss also how they can be used, what is the content, to include a listing of quads used, etc).

ATTRIBUTES

Elk	Elk	O.CW/681_1 ; O.681
MUL	Mule Deer	O.CW/681_1 ; O.681
ANT	Antelope	O.CW/A73_1 O.A73 O.CF/A73_1
SHP	Bighorn Sheep	O.CW/S10_1 O.S10 O.CL/S10_1
WTF	Waterfowl	O.CP/1 H.P/1
TES	Threatened-Endangered Species	BF.P/1 ; Be.CW/1 ; SCRM ; BE.R/1
RAS	Rapter Sites	R.GE/810_1 R.RT/810_1 R.PF/810_1

ELK, MULE DEER, ANTELOPE, BIGHORN SHEEP

O	Occupied habitat year long including winter
CW	Crucial winter range
CF	Crucial fawning range
CL	Crucial lambing range
681	CDOW game management unit
_1	Area number of special polygon

WATERFOWL

O	Occupied habitat
CP	Crucial production
1	Area number of special polygon
H	Historic wetland
P	Potential area

THREATENED AND ENDANGERED SPECIES

BF	Black-footed ferret
BE	Bald eagle
P	Potential area
R	Roost area
SCRM	Sandhill crane roost during migration
1	Area number of special polygon
CW	Crucial winter range

RAPTER NEST SITES

R	Rapter site
GE	Golden eagle
RT	Red tail hawk
PF	Prairie falcon
810	CDOW game management unit
1	Site number in management unit

REFERENCES

PERSONS CONTACTED

Colorado Division of Wildlife (CDOW)

Clayton Wetherill	Area Supervision	Monte Vista, CO
Steve Torbet	Area Biologist	Monte Vista, CO
Jim Olterman	Sr. Wildlife Biologist	Montrose, CO
Dick Weldon	D.W.M.	Lahara, CO
Tom Ranch	D.W.M.	Monte Vista, CO
David Kenvin	D.W.M.	South Fork, CO
Bert Widhalm	D.W.M.	Saguache, CO
U.S. Fish & Wildlife Service		
Mel Nail	Refuge Manager	Alamosa, CO

STUDIES USED

Bald Eagles of the San Luis Valley, CO: Their Winter Ecology and Spring Migration	MSV	1984
Colorado Big Game Harvest	CDOW	1983
Colorado Wildlife Workshop, Species of Special Concern	CDOW	1985
Endangered and Threatened Wildlife and Plants	USFWS	1983
Rio Grande National Forest EIS	USFWS	1985
San Luis Resource Area Grazing Management E.S.	BLM	1978
San Luis Valley Waterfowl, Waterbird Wetland Plan	CDOW	1986 (Draft)

CHAPTER 12

FOREST AND WOODLAND RESOURCES

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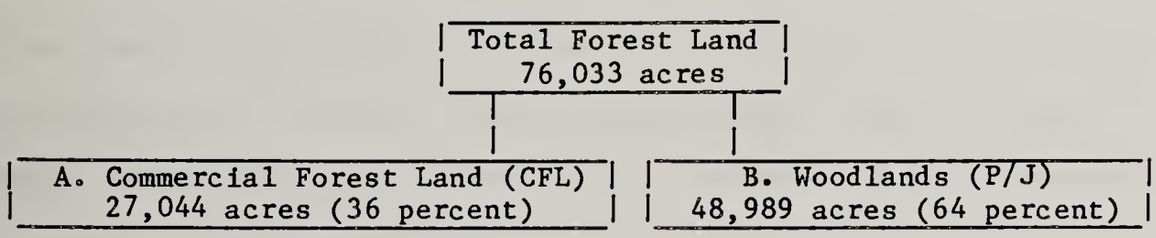
CHAPTER 12.--FOREST AND WOODLAND RESOURCES

RESOURCE AREA PROFILE

Description

Fifteen percent (76,033 acres) of BLM surface acres in the San Luis Resource Area are occupied by forest cover types that can be grouped into commercial forest land or into woodlands. The GIS theme, which displays the location, description, and extent of the forest cover, is entitled FOR and is briefly summarized in Figure 1.

FIGURE 1. FOREST AND WOODLAND ACREAGE CLASSIFICATION



All commercial and woodland forest acres are then assigned to one of the following four management categories:

Lands Available for Intensive Management of Forest Products--These are areas where forest management is one of many uses, but where other uses or resource values are not emphasized. The acreage consists of 5,769 acres of suitable CFL and 12,482 acres of productive operable woodlands (18,251 acres total).

Lands Available for Restricted Management of Forest Products--Areas where other multiple use or resource values are emphasized and selective harvesting and extended rotation are generally applied. No forested acres were inventoried in this category.

Lands Where the Forest will be Managed to Enhance Other Uses--Areas where forest management is tailored and forest products are harvested specifically to benefit other identified resource values or uses. The acreage consists of 21,274 acres of CFL not currently economical to harvest, or are biologically unsuitable for sustained forest management. Also 36,508 acres of nonoperable woodlands are included (57,782 acres total). Forested acres now in wilderness study area status are presently assigned here.

Forest Lands Not Available for Management of Forest Products--Areas where forest management is excluded. This category would include forested acres in designated wilderness or primitive areas. No acres have been inventoried in this category at the present time.

The allowable harvest level for this planning period will come from the forest types assigned to the first category above. These acres are currently operable with existing equipment and technology.

Commercial Forest Land (CFL

All forest lands capable of yielding at least 20 cubic feet per acre per year of commercial tree species are included in this category. The tree species included here are those valued as important by local industry and are: ponderosa pine (PP), Douglas-fir (DF), Engelmann spruce (ES), lodgepole pine (LP), white fir (LPrp), and aspen (A). The acreage distribution by county and species is shown in Table 12-1.

TABLE 12-1
FOREST ACREAGE DISTRIBUTION

County	Acres (BLM)	PP	DF	LP	ES	A	LbrP	P/J	TOTAL
Alamosa	43,957	-	-	-	-	78	-	-	6,637
Conejos	185,547	-	-	-	-	524	-	-	5,665
Rio Grande	54,996	-	-	-	58	250	-	-	5,840
Saquache	231,731	-	-	146	574	1,331	110	23,000	
	516,231	12,231	11,440	146	893	2,334	1,209	47,780	76,033

The suitable commercial forest lands produce between 20 and 49 cubic feet per acre per year. These forest acres are commonly an ecotone between the open valley floor and the more continuous forest environment on the adjacent national forest land. Many of the stands are narrow stringers or isolated patches averaging about 50 acres in size. Sparse, patchy groups of trees and small isolated stands less than 10 acres in size were not typed nor included as suitable forest land.

Suitable CFL are those forest lands judged to be capable of sustaining long-term timber production. The nonsuitable commercial forest lands are those incapable of sustained long-term timber production because of their fragile nature or inability to adequately reforest under existing harvesting or reforestation technology. Nonsuitable forest lands were identified during the Timber Production Capability Classification and Operations Inventory (TPCC).

Woodlands

Juniper is normally the first occurring tree species above the valley floor. As elevation increases, pinon pine becomes more common and the typical pinon-juniper woodland becomes prevalent. Pinon pine-juniper communities usually have an understory of grasses and shrubs adapted to zeric conditions. Precipitation averages 10 to 15 inches annually, and elevations range from 7,500 to 9,000 feet. Small stands, typed as limber pine or bristlecone pine, will be treated as woodlands. They are generally located on shallow, rocky exposed ridges at or near timberline. Gambel oak (no acreage included as woodlands because they rarely attain heights of more than 20 feet) is normally found in the upper portion of and just above the pinon-juniper woodlands. It commonly forms large, dense thickets on many sites, which impedes the establishment of conifers. Plains cottonwood, narrow leaf cottonwood, Rio Grande cottonwood, and peach-leaf willow may occur in some drainages. No harvesting of forest products is planned in these drainages or riparian areas. Productive, operable woodlands are those stands located on slopes of 35 percent or less with crown closures averaging 40 percent or more. Nonoperable woodlands are those stands on slopes greater than 35 percent, or with crown closures averaging less than 40 percent.

Condition and Trend

Commercial Forest Lands

Approximately 75 percent of the commercial forest acres have had some type of harvest entry during the past 20 to 25 years. Most of these areas appear to have had diameter-limit timber sale contract stipulations that allowed

removal of all trees greater than a given diameter. Unfortunately, the residual stands of Douglas-fir and ponderosa pine are poorly stocked with smaller, suppressed or intermediate trees, and a few low quality sawlog size trees per acre commonly infected with dwarf mistletoe.

The regeneration occurring naturally in these stands is highly vulnerable to infection by the dwarf mistletoe present in the overstory. At present, the western spruce budworm is the most damaging insect pest to the Douglas-fir and white fir. The aspen stands are mature and appear generally healthy. However, aspen clones begin deteriorating in vigor and volume after age 80. If aspen is to be regenerated vegetatively, it should be harvested between ages 80 and 120 so adequate sprouting is possible. White trunk rot is responsible for nearly 60 percent of the decay loss in aspen. Several canker and leaf diseases are also common. White pocket rot, rust-red stringy rot, and red-brown butt rot are very common decay loss pathogens in the conifer stands. Because of the extent of the cut over acres, the predominantly mature age classes, and the presence of forest pests, the commercial forest lands are in fair to poor condition and in a deteriorating trend.

Woodlands

The pinon-juniper woodlands generally exhibit a wide range of diameters and stocking density. However, most of the stands are mature or approaching maturity. Mature stand volumes range from 7 to 10 cords per acre for the productive operable acres. Insects and diseases are endemic in the pinon/juniper cover type, although a few small, scattered pockets of mortality caused by various root rots (primarily shoestring root rot) are present. Generally the woodlands can be described as healthy and in a stable condition.

EXISTING MANAGEMENT SITUATION

Current Management

Commercial Forest Land

Proper forest management requires that the diseased, cut over stands be treated and put back into production as soon as possible. Treatment of these stands is most efficiently accomplished by making a second logging entry; and selecting an adequate number of the best appearing and most disease free residual trees to serve as a seed source and shelter wood; and remove the rest. We must also achieve adequate slash treatment and seedbed preparation during this fuelwood or low quality sawtimber removal step. As a result of the high proportion of cut over land, we have concentrated on getting these sites back into production for the past 3 years, rather than offer sawtimber from healthy stands. The volume being offered is composed of material with small average stem diameters, and the quality is most generally suitable for fuelwood only. A 5-year dwarf mistletoe suppression plan was written, and biological evaluation done by the USFS, Division of Timber, Forest Pest, and Cooperative Forestry Management. The plan was approved by the Colorado State Director in 1985.

Woodlands

At present, fuelwood, Christmas trees, and transplant trees are sold on a demand basis. Christmas trees and transplant trees have been made available in past vegetation conversion (chaining) projects. Free use of dead and down fuelwood was a past policy which is difficult to change. Requiring family and

small commercial woodcutters to pay for fuelwood, and to also harvest in designated areas to accomplish specific management goals such as improving habitat diversity, forage increases, and insect and disease control takes time and appears to reduce demand. It is hoped that this is temporary and will eventually be accepted as it has in other areas.

Supply-Demand Analysis and Dependency

Historically, the primary demand has been for sawtimber. The Colorado Forest Products Directory lists nine firms in the four counties containing BLM forest land. The existing mill capacity for Engelmann spruce, aspen, lodgepole pine, Douglas-fir, ponderosa pine, and white fir is 67,700 Mbf annually, if available. The forest products produced includes: studs, fencing, boards, timbers, dimension, house logs, paneling, siding, ties, posts and poles, fuelwood, shavings, and chips. In addition, approximately 10 more small logger/sawmill operators have purchased or shown interest in past BLM sales. Fifteen percent of the mature commercial forest acres in the Canon City District is located in the San Luis Resource Area (SLRA). The recently calculated allowable cut for the Canon City District is 2.1 MMbf. The allowable harvest allocation to the SLRA is approximately 288 Mbf annually. This is less than 1 percent of the local demand for sawtimber. The large majority is obtained from the national forests. However, since all of the mills are located generally on the valley floor, we get annual inquiries to buy BLM sawtimber for winter operations. The BLM forest land lies at lower elevations and is closer to utilization centers. It would be a simple matter to rapidly harvest the small remaining acreage of healthy sawtimber stands.

Future demand for BLM timber is expected to increase because of improved technology in utilizing small stems for such things as oriented strand, waferboard, and laminated products. Sawtimber operators have been discouraged from bidding on some sales because of the big game winter closure contract stipulations (prevents winter logging on BLM land when operations are snowed out of higher national forest land).

Only a few commercial fuelwood operators are located in the SLRA, and of these, very few have equipment that can accomplish the road improvement, maintenance, and mechanical site preparation for natural regeneration, and other necessary onsite mitigating measures. The supply of fuelwood available from the woodland forest far exceeds the present demand. An area regulation allowable harvest calculation in the current productive operable woodland acreage shows 660 cords 1/ available annually. We have been selling approximately 150 cords annually on a demand basis to families and small commercial operators. Demand for Christmas trees (350 annually) can be met for a short period by completing a forestry and visual resource plan for the Mt. Blanca chaining area, and allowing removal from these chainings. Also at this time, trespass removal of transplant trees is suspected.

The following activity plans should be written to further identify the volume of available forest products.

- Allowable Harvest Plan for the Canon City District.
- Blanca Forestry/Visual Resource Management Plan.
- Forestry Supplement to the Trickle Mountain Habitat Management Plan.
- Greenie Mountain Forest Management Plan.

1/ 12,482 acres of productive operable woodlands divided by 175 yr rotation = 71.3 acres available to harvest annually x 9.3 cords per acre = approximately 660 cords.

CAPABILITY ANALYSIS (CA)

The following forms describe the Capability Resource Levels (RCLs), the management practices applied to each particular RCL, and the site(s) within each RCL.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Forest and Woodlands Resources Specialist Name J. Wilson

Date 10-2-86

Resource Capability Level 1 (define the highest priority for management)

Management Category 1 - Lands available for intensive management of forest products.

1. Help meet demand for forest products (sawtimber, roundwood, and fuelwood) first from the 5,769 acres of suitable commercial forest land.

Resource Capability Level 2 (define the second highest priority for management)

Management Category 1

1. Additional demand for fuelwood over that available from the commercial forest land will be made available from the 12,482 acres of productive operable woodlands.

Resource Capability Level 3 (define the third highest priority for management)

Management Category 3 - Lands where the forests will be managed to enhance other uses.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Forest and Woodlands Resources

Specialist Name J. Wilson Date 10-02-86

Describe the types of management that you would use in RCL 1 areas

1. Improve the existing age class distribution. The silvicultural harvest systems used will be: clearcutting (aspen, lodgepole pine), seed tree (Douglas-fir, ponderosa pine), shelter wood (Douglas-fir, ponderosa pine, lodgepole pine), group selection (Engelmann spruce, Douglas-fir).

2. Reduce impacts of forest pests.

3. Use intensive forest management practices when feasible (PCT and CT).

4. Reduce percentage of poorly stocked stands (planting, seeding, and site preparation by prescribed fire or mechanical means to enhance natural regeneration).

5. Maintain species diversity.

6. Leave adequate, high quality seed source.

7. Acquire access.

Describe the types of management you would use in RCL 2 areas

1. Harvest mature P/J utilizing clearcutting, seed tree cuts, selection cuts, or salvage removal.

2. Acquire access.

3. Use area regulation to calculate sustainable harvest level.

Describe the types of management you would use in RCL 3 areas

The same types of harvesting and pest control techniques could be applied on these lands. They are not considered to be economically or environmentally operable during this planning horizon; therefore, no planned cutting is scheduled. Harvest or disturbing activities may include right-of-way clearing for utilities and road construction, mineral or oil and gas extraction, or range or wildlife projects to enhance forage or habitat improvement.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name J. Wilson Area Number (from GIS Theme) _____

Resource Forest and Woodland Resources RCL (i.e., 1, 2 or 3) 1

Date 10-02-86

Description of Area (Species, number of acres, miles, etc.)

Species	RCL 1
aspen	593
Douglas-fir	1,829
Engelmann spruce	167
lodgepole pine	107
ponderosa pine	3,073
limber pine	0
pinon/juniper woodland	0
	5,769 acres (288 MBF)

Rationale for RCL

RCL 1 - These are the industrially preferred species present. Demand is high if the timber is in good condition. They are in rather poor and declining condition and improvement work is necessary to bring productivity back up to capacity. These areas are a major wildlife habitat component, and are esthetically important.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name J. Wilson Area Number (from GIS Theme) _____

Resource Forest and Woodland Resources RCL (i.e., 1, 2 or 3) 2

Date 10-02-86

Description of Area (Species, number of acres, miles, etc.)

Species	RCL 2
aspen	0
Douglas-fir	0
Engelmann spruce	0
lodgepole pine	0
ponderosa pine	0
limber pine	0
pinon/juniper woodland	12,482
	12,482 acres (660 cords)

Rationale for RCL

RCL 2 - This is the largest forest cover type; however, it is in generally good condition, demand is not as high currently, and economically is not as potentially valuable as RCL 1 lands.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name J. Wilson Area Number (from GIS Theme) _____

Resource Forest and Woodland Resources RCL (i.e., 1, 2 or 3) 3

Date 10-02-86

Description of Area (Species, number of acres, miles, etc.)

Species	RCL 3
aspen	1,741
Douglas-fir	9,611
Engelmann spruce	726
lodgepole pine	39
ponderosa pine	9,158
limber pine	1,209
pinon/juniper woodland	35,298
	57,782 acres (no planned harvest level)

Rationale for RCL

RCL 3 - These lands are currently much too costly to manage, some acres may not be able to be regenerated in the prescribed time frames, and are generally environmentally unsuited for sustained harvest.

DATA THEMES

The following attributes are used to describe the forest type polygons displayed on the GIS maps (FOR theme).

```
                                  1/    2/    3/    4/    5/      6/
FOR ----------. 2 . 5 . 9 . 0 . _ . P . % . W . $ . 4 . . . 2 . # . 8 . 3 . 0 .
                                                7/
Woodlands P/J . 0 . 0 . 0 . 1 . _ . W . % . 4 .
```

1/ Stand number is an unchanging TPCC-01 record for item number (METI). Each stand has a unique number assigned to it so that it can be matched back to our TPCC-01 system which contains additional stand information.

2/ Species

ponderosa pine	(P)
Douglas-fir	(D)
limber pine	(F)
aspen	(A)
Engelmann spruce	(S)
lodgepole pine	(L)
pinon/juniper	(W)

3/ TPCC Management Decision

(N) no restrictions (no special harvest and reforestation techniques necessary)

(R) restricted timber harvest (refers to limited silvicultural and site preparation systems necessary to achieve natural forest regeneration)

(W) area withdrawn (no planned harvesting during this planning period)

4/ Size Class	5/ Stocking Class	6/ Birthyear
(1) 0.1-0.9 inch	(0) non stocked	Use last three digits of
(2) 1.0-4.9	(1) poorly stocked	birthyear
(3) 5.0-8.9	(2) medium stocked	
(4) 9.0-15.9	(3) well stocked	
(5) 16 plus		

Character (_) separates stand number from species

Character (%) separates species from TPCC management decision

Character ($) separates TPCC mgt. decision from size class

Charater (.) separates size class from stocking class

Charater (#) separates stocking class from birthyear

7/ Woodlands (pinon/juniper) categories

(1) nonoperable (slopes greater than 35 percent)

(2) operable P/J (15-24 percent crown closure on slopes less than 35 percent)

(3) operable P/J (25-39 percent crown closure on slopes less than 35 percent)

(4) operable P/J (40 percent plus crown closure on slopes less than 35 percent)

Areas sparsely occupied by pinon/juniper with less than 15 percent crown closure were considered too sparse to type as woodlands.

REFERENCES

1. Forest Land and Resource Management, Plan Rio Grande National forest
2. Colorado Forest Products Directory, Colorado State Forest Service
3. Canon City District Ten-Year Forest and Woodland Management Activity Plan and Environmental Assessment (writing in progress)

CHAPTER 13

LAND AND REALTY ACTIONS

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CHAPTER 13--LAND AND REALTY ACTIONS

RESOURCE AREA PROFILE

Description of Resource

The San Luis Resource Area, Canon City District, is located in the San Luis Valley in south central Colorado. It is bounded on three sides by the Rio Grande National Forest except the southeast section which is Costilla County and consists entirely of private land. The south boundary is the New Mexico State line.

For this RMP, the study boundary will be the Rio Grande National Forest boundary. The national forest land was excluded because there is no BLM land within the forest with the exception of the town of Platoro which has three small parcels. The Rio Grande National Forest recently completed a comprehensive land use plan for the entire forest.

Approximately 516,231 acres of surface and 101,926 BLM mineral estate lie within the San Luis Resource Area. See Table 13-1.

TABLE 13-1
BLM LANDS IN SAN LUIS RMP

COUNTY	SURFACE	MINERAL ESTATE
Alamosa	43,957 1/	16,259
Conejos	185,547	22,301
Costilla	156	0
Mineral	0	0
Rio Grande	54,996	13,788
Saguache	231,731 1/	49,578 2/
TOTAL	516,387 1/	101,926

1/ With Reserved Lands.

2/ Of this total 320 acres have oil and gas only.

Also within the San Luis Resource Area, there is the Alamosa Refuge (U.S.F.W.S., 10,350 acres), Monte Vista Refuge (U.S.F.W.S., 13,839 acres), and the Great Sand Dunes National Monument (N.P.S., 38,659 acres). The Colorado Division of Wildlife has two Wildlife Areas, Hot Creek and La Jara, within the planning area.

The majority of the public land in the San Luis Resource Area is made up of large blocks of public land that are suitable for multiple use management. The valley floor is mostly private land with a few exceptions. Various isolated tracts of public land are located throughout the valley floor and in the Del Norte, South Fork area. (See Table 13-2)

Since the majority of BLM land is in large blocks, the parcels that are designated for disposal are small (40-160 acres) and scattered. Most of them are on the valley floor and not even in the foothills so the only vegetation, if any, is greasewood. The view from them is great but what most people think of Colorado as being mountains and pine trees isn't available on these scattered parcels.

TABLE 13-2
BLM Lands vs. Other Lands
(Only lands within BLM boundary)

County	BLM 3/	%	Private	%	State	%	Other	% 5/	Total
Alamosa	43,957	26	71,067	42	53,476	32	432	4	168,932
Conejos	185,547 6/	63	66,927	23	39,632	13	2,790	1	294,896
Costilla	156	1 4/							156
Rio Grande	54,996	77	13,453	19	2,560	3	840	1	71,849
Saguache	231,731	68	86,556	25	21,311	6	360	1	339,958
Outside 1/			955,370	84	42,930	4	120,189	12 2/	1,118,489
	516,387		1,193,373		159,909		124,611		1,994,280

1/ These are lands within the BLM boundary but are not managed by BLM.

2/ This figure includes Alamosa Refuge, Monte Vista Refuge, Great Sand Dunes National Monument, and Baca Grant (96,000 acres).

3/ The BLM acreage contains about 20,000 acres (4%) of scattered tracts of public land.

4/ Only the public land in Costilla County is included.

5/ Includes state and county highways and municipal lands.

6/ Less 162.17 acres (David Broyb's Desert Land Entry).

EXISTING MANAGEMENT SITUATION

Current Management

At the present time, lands program requests are handled on a demand basis. Although the demand has increased somewhat over the last 10 years, the number is small and infrequent. Approximately 8-10 applications per year are received in the SLRA and involve access related actions.

Most of the current land actions involve rights-of-way such as power lines, telephone lines, roads, communications, etc. The ongoing Bureau of Reclamation's Closed Basin Project has made several requests for road and power line rights-of-way. This trend is expected to continue. These rights [illegible]y are scattered over the entire resource area. Approximately 65 rights [illegible]y authorizations are recorded in San Luis Resource Area office. (These authorizations are primarily concerned with roads, powerlines, and communications.)

Since most of the BLM land in the San Luis Resource Area is in large blocks, the emphasis is to retain it in federal ownership. Several small scattered tracts were identified for disposal in the Saguache and San Luis MFP's and when the Asset Management program was first priority. There have been two public sales with some of the parcels sold and the remainder still available for sale. Future land sales will continue to offer for sale the identified disposal tracts. There are frequent public inquiries about public land that is or will be for sale.

The present land sale program has included some of the scattered tracts that were identified for disposal in the MFP's and Asset Management Program.)

After some of these tracts are selected for sale, their legal description is verified for location and size. Then an appraisal is done to determine its minimum bid price. The lands are segregated from appropriation under the public land laws.

The general public as well as adjacent landowners are permitted to bid on those parcels identified for competitive bidding. Bids from adjacent landowners will be the only ones accepted on those parcels identified for sale by modified competitive procedures on the initial sale day. Sale Procedures are: Bidding will be by sealed bid only. No bids will be accepted for less than the minimum bid price for each parcel. Sealed bids will be accepted until a certain time on the sale date. Bid opening will be at a given time on the sale day at the Canon City District Office. Any of the parcels not sold on the sale date will be re-offered for sale by competitive bidding to the general public beginning at a certain date and the 1st and 3rd Wednesdays each month thereafter until sold or the sale is canceled.

This listing shows lands that have been sold and lands that are currently for

. These parcels have been sold and ownership transferred:

Serial #/Parcel	Legal Description	Acreage	Minimum Bid Price
C36840-1	T.44N., R.8E., Sec. 6, NMPM SW¼NE¼; SE¼NW¼; NE¼SW¼	120.00	$3,600.00
C36840-2	T.44N., R.9E., Sec. 14, NMPM NW¼	160.00	$16,000.00
C36840-4	R.43N., R.10E., Sec. 12, NMPM Lot 1 Lot 2	0.97 2.41	 $140.00
C36840-7	R.43N., R.9E., Sec. 12, NMPM NW¼SE¼	40.00	$4,000.00
C36840-9	T.45N., R.10E., Sec. 18, NMPM E½NE¼	80.00	$10,400.00

The following parcels have been offered for sale and are currently available:

Parcel No.	Legal Description	Acreage	Minimum Bid Price
C36840-3	T.43N., R.11E., Sec. 11, NMPM NW¼SW¼	40.00	$8,000.00
C36840-5	T.43N., R.10E., Sec. 14, NMPM SE¼NW¼	40.00	$4,000.00
C36840-8	R.45N., R.9E., Sec. 13, NMPM E½NE¼	80.00	$12,000.00
C36840-10	T.45N., R.10E., Sec. 21, NMPM W½SW¼	80.00	$24,000.00
	T.44N., R.7E., NMPM		
S-11	Sec. 30, Lot 2	60.83	$24,800.00
S-12	Sec. 30, NE¼SE¼	41.68	$15,300.00
	T.43N., R.10E., NMPM		
S-6	Sec. 18, Lots 3, 4 E½SW¼	161.44	$16,200.00
	T.37N., R.12E., NMPM		
A-1	Sec. 10, S½SE¼	80.00	$10,000.00
A-2	Sec. 15, S½NE¼	80.00	$10,000.00
	T.29S., R.73W., 6th P.M.		
A	Sec. 31, Lot 2, NE¼NW¼	82.47	10,300.00

The following parcel is being sold to the Catholic Church in Antonito, through Diocese of Pueblo, to expand their cementery near Ortiz, CO. It will also alleviate a trespass problem since about / acre of the existing cementery is already on public land. The parcel is being offered only to the church because use of the land for a cementery is a very singular and exclusive one. It is very doubtful that anyone would dispute this fact.] omit

T.32N., R.8E., NMPM, Colorado	
Sect. 13, S½SW¼NE¼SW¼	5.00

Three exchange proposals (Bagwell, Coolidge, and Colorado Division of Wildlife) are currently being processed. The Bagwell Exchange is ready for completion as soon as a power site classification review is resolved. The Coolidge exchange on La Garita Creek and the Colorado DOW Exchange in the Hot Creek area are at the appraisal stage.

Sanitary landfills have become a point of concern and importance here in the SLRA as well as everywhere else. R&PP leases are no longer used to authorize sanitary landfills on public lands. Now direct sale of a parcel of land to the county, etc. is the recommended procedure. Currently, Saguache and Rio Grande counties are in need of new sites for sanitary landfills and are considering some sites on public land. At the present time, public land in Saguache county is classified and is tied up in the National Wildlife Federation lawsuit and nothing can be done with the land until the lawsuit is resolved.

Is Saguache still consider public lands? Have they bought a private site?

Saguache County has now purchased a private parcel for their new landfill. It is adjacent to public land and the county has applied for a ROW across public land to the landfill site.

Rio Grande County holds the only site in the SLRA. The lease has expired and will not be renewed. due to current policy, BLM has not heard from the county since last summer when there was a meeting to discuss suitable sites.

Incinerator?

A somewhat rare occurrence that has been recently processed is a land donation to the BLM from a private individual. The forty acre parcel adjoins a BLM parcel and it was decided to accept it since it had a clear title and had value in public ownership.

Trespass has been an infrequent occurrence in the SLRA. There may be several cases of agricultural trespass. There is one case where a sawmill has spread over onto the adjacent BLM land. That case will probably be resolved this year since trespass abatement is a high priority in 1987.

How will you treat trespass? The RMP should contain the criteria you will use to resolve these cases.

As required by Colorado Instruction Memo CO-86-209 for incorporating water power resources (including existing withdrawals) into RMP's, all lands in the resource area must be assigned to one of three suitability categories along with the management directions appropriate to each category. (NOTE: Need to describe the situation here. Numbers if any . . . where are they, etc.)

Supply-Demand Analysis

It is anticipated that the demand for rights of way authorizations will continue at the current level which is about 10 rights of way applications per year. The majority of the applications are for access related projects such as roads and power or communications needs.

The San Luis Resource Area receives about 12 general inquiries per year from individuals interested in purchasing public land in the SLRA and Canon City District. The majority of these individuals are looking for a piece of Colorado with mountains and trees on it. The public land likely to be identified for disposal in the SLRA would not fit this criteria. (NOTE: State why . . . specifically state where it is.)

SLRMP/MSA-LND/03-11-87/0372P

In addition to the Bagwell, Coolidge and Hot Creek exchanges, one other exchange has been discussed with the Clarence Jensen estate to enlarge the Blanca Wildlife area. One sale proposal has been discussed verbally that would mitigate a trespass situation. These proposals involve public land parcels ranging in size from 40 acres to about 1000 acres.

Is this within or outside the Wildlife area?

The San Luis Valley has a fairly stable population overall while certain areas experience seasonal population increases. All the counties and several towns have their own sanitary landfills, but eventually new sites must be found. At the present time, one county is looking for a new site and are considering BLM land as one alternative. Current policy dictates that land for landfills be sold at fair market value to the applicant. BLM anticipates that suitable public land can be identified for sale to meet the future needs of the counties.

Good

R&PP's, leasing, etc. are no longer considered as options for landfill sites due to the liability factor to the U.S. Government.

CAPABILITY ANALYSIS

Land Tenure Adjustments

Land actions involving tenure adjustments fall into one of two categories; disposal of a particular parcel or acquisition of a particular parcel serving the national interest.

1. Disposal - These are shown as RCL I and are lands which will be considered for sale or transfer through exchange or boundary adjustment. Generally, private lands in these zones will not be acquired through exchange. In sales, the law requires that the mineral estate be reserved to the government although minerals may be transferred through a separate action. Criteria for category are:

a. Public lands to be considered for RCL I:

   1) Lands proximate to cities, towns, or development areas.
   2) Isolated non-urban tracts so located as to make effective and efficient management impractical.
   3) Lands designated for agricultural, commercial, or industrial development as the highest use or otherwise most appropriate use.

b. Consider impacts to local governments.

c. Identify specific tracts for disposal.

d. Consider reserving public access in patent, where it would benefit the public.

2. Acquisition - These are shown as RCL 2 and:

Consider acquisition of private land identified by the resource specialists as necessary to improve management of a particular resources. Give priority to exchange as the method of acquisition.

Lands and mineral resources on blocked-up public lands will be retained as a matter of policy under BLM administration for multiple use and boundary adjustments, and recreation and public purposes applications would be considered.

a. Public lands fitting (in RCL 2) this description typically are:

1) Designated wilderness areas and wilderness study areas.
2) National conservation areas.
3) Wild and scenic rivers and wild and scenic study rivers (including identified candidate study segments.
4) National or historic trails.
5) Natural or research natural areas.
6) Designated areas for cultural or natural history.
7) Designated areas of critical environmental concern.
8) Designated wild horse preserves.
9) Other congressionally designated areas.
10) Threatened or endangered species habitat areas (including plants and plant communities).
11) Riparian habitat areas.
12) Valuable recreation areas (especially water based).
13) Wetland areas as defined in Executive Order 11990, dated May 24, 1977.
14) Flood plain areas (100-year) as defined in Executive Order 11988, dated May 24, 1977.

15) Large blocks of public lands which are suitable for multiple use management.
Lands containing water sources with valid existing water rights held by BLM (usually a 40-acre tract containing a spring).
17) Big game critical winter range.

b. Public mineral resources fitting this description typically are:

1) Known recoverable coal resource areas.
2) Known geologic structures (oil and gas).
3) Areas identified to have nationally significant oil shale deposits.
4) Lands known to contain economic deposits of locatable and salable minerals.

Rights of Ways (ROW)

Land actions involving rights-of-way determinations fall into one of three categories shown below:

1. Suitable ROW Corridor - are those existing corridors or are preferred locations for future corridors where multiple use terms and conditions will allow (RCL 1).

2. Suitable ROW Corridor with Limitations - are these locations where multiple use terms and conditions will allow but should be avoided if possible (RCL 2).

3. Non-Suitable Corridor - are those locations where multiple use terms and conditions will not allow right-of-way (RCL 3).

Water Power Withdrawals

Based on the SPG all land actions involving water power withdrawals fall into one of three categories shown below:

1. Suitable for intensive management of water power and reservoir sites.

These are lands recommended for continuation of the withdrawal. Areas which warrant the protection of the water power and/or reservoir sites through a withdrawal. Management of other resources in these areas will be adjusted in accordance with the terms of the withdrawal.

Unsuitable for water power and reservoir sites.

These are lands not recommended for continuation of the withdrawal. Areas which can be best managed without the withdrawal; BLM recommends revoking the withdrawal. Such recommendation needs to include a demonstration of a higher or better land use.

SLRMP MSA

CAPABILITY ANALYSIS FORM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Land Tenure Adjustment Specialist Name B. Miller

Date 2-27-87

Resource Capability Level 1 (define the highest priority for management)

DISPOSAL - Place lands that fit the Category planning criteria for DISPOSAL. Criteria includes lands proximate to cities, towns or development areas, and isolated non-urban tracts.

Resource Capability Level 2 (define the second highest priority for management)

ACQUISITION - Identify private lands for acquisition which are necessary to improve management of a particular resource.

SLRMP MSA

CAPABILITY ANALYSIS FORM 2

MANAGEMENT PRACTICES

Resource Name Land Tenure Adjustment

Specialist Name B. Miller Date 2-27-87

Describe the types of management that you would use in RCL 1 areas

DISPOSAL

Priority for disposal of public lands within these zones; through sale, R&PP, exchange and boundary adjustment.

Public lands in this zone can be exchanged for private lands in a retention zone. Generally, do not acquire private lands through an exchange that are within a disposal zone.

Encourage considering Section 209 FLPMA mineral interest conveyance applications for lands that have no known mineral values and are within a disposal zone. This type of conveyance would benefit BLM by improving management efficiency; reducing split estates.

investment of BLM funds to a minimum for lands within a disposal zone.

what about SIS? Cooperative management

Describe the types of management you would use in RCL 2 areas

ACQUISITION

Priority on acquisition of private lands identified by resource specialists as necessary for a resource program. Emphasis on exchange as method of acquisition rather than purchase.

need criteria here

are these in any areas where you know we want to acquire? If so say so.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Bill Miller Area Number (from GIS Theme) _____

Resource Land Tenure Adjustment RCL (i.e., 1, 2 or 3) 1

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

The parcels are small (40-160 acres), scattered, and isolated throughout the resource area. They generally have little if any, vegetation on them. (Any parcels that are part of big blocks would be sold because of adverse location or uneconomic management potential.) Others on a case by case basis.

Rationale for RCL

'SC 1713. Sec. 203 (a) A tract of the public lands (except land in units of the National Wilderness Preservation System, National Wild and Scenic Rivers Systems, and National System of Trails) may be sold under this Act where, as a result of land use planning required under section 202 of this Act, the Secretary determines that the sale of such tract meets the following disposal criteria:

(1) such tract because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands, and is not suitable for management by another Federal department or agency; or

(2) such tract was acquired for a specific purpose and the tract is no longer required for that or any other Federal purpose; or

(3) disposal of such tract will serve important public objectives, including but not limited to, expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land and which outweigh other public objectives and values, including, but not limited to, recreation and scenic values, which would be served by maintaining such tract in Federal ownership.

(b) Where the Secretary determines that land to be conveyed under clause (3) of subsection (a) of this section is of agricultural value and is desert in character, such land shall be conveyed either under the sale authority of this section or in accordance with other existing law.

This level includes lands identified for further study.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Bill Miller Area Number (from GIS Theme) _____

Resource Land Tenure Adjustment RCL (i.e., 1, 2 or 3) 2

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

Any areas in the resource area that are deemed necessary to enhance management and increase efficiency will be acquired. Access needs are always a high priority on public lands. Others on a case by case basis.

Rationale for RCL

uisitions shall be consistent with the mission of the BLM and with icable BLM land use plans.

In order to be feasible, any acquisition would have to benefit at least one resource on a long term basis.

Acquisition by exchange process will be the preferred method.

SLRMP MSA

CAPABILITY ANALYSIS FORM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Rights-of-Way Specialist Name B. Miller

Date 2-27-87

Resource Capability Level 1 (define the highest priority for management)

Suitable lands for linear ROW's and ROW corridors.

Resource Capability Level 2 (define the second highest priority for management)

Suitable lands for linear ROW's and ROW corridors with limitations.

Resource Capability Level 3 (define the third highest priority for management)

Non-suitable lands for linear ROW's and ROW corridors.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Rights-of-Way

Specialist Name B. Miller Date 2-27-87

Describe the types of management that you would use in RCL 1 areas

Allow linear ROW's, use existing corridors, and identify potential corridors where multiple use terms and conditions will allow.

Describe the types of management you would use in RCL 2 areas

Same as RCL 1, but with limitations to protect resources.

Describe the types of management you would use in RCL 3 areas

Allow no ROW's unless mandated by law or there is no other feasible alternative route.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name B. Miller Area Number (from GIS Theme) _____

Resource Rights-of-Way RCL (i.e., 1, 2 or 3) 1

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

Any suitable location for linear ROW's.

Existing Corridors

Poncha Pass
Hwy 160 W. (Wolf Creek Pass)
Hwy 17 (Cumbres Pass)
285 South
160 East (La Veta Pass)
nza Road
Alamosa River

Potential Corridors

Hayden Pass
Cochetopen Pass
Carnero Pass
Hwy 142 (East of Manassa)
Others on a case by case basis

Rationale for RCL

- Allow lineal ROW's on suitable locations.
- Existing corridors in use.
- Existing and potential corridors are natural passes or main highways since the valley is surrounded by mountains.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name B. Miller Area Number (from GIS Theme) _____

Resource Rights-of-Way RCL (i.e., 1, 2 or 3) 2

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

Same as RCL 1 with limitations.

Rationale for RCL

Same as RCL 1 with limitations.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name B. Miller Area Number (from GIS Theme) _____

Resource Rights-of-Way RCL (i.e., 1, 2 or 3) 3

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

No ROW's unless mandated or no other alternative. Case by case basis consideration.

Rationale for RCL

- Not a feasible location.
- Other resource values may be higher.
- May be necessary to authorize ROW in spite of all other considerations.

SLRMP MSA

CAPABILITY ANALYSIS FORM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Water Power Withdrawals Specialist Name B. Miller

Date 2-27-87

Resource Capability Level 1 (define the highest priority for management)

Suitable for intensive management of water power and reservoir sites .
Areas where water power and reservoir development is the priority among a number of possible uses. Other uses must be conditioned in such a way as to protect the use of the site for water power purposes. Certain other uses must have the concurrence of an stipulations furnished by the Federal Energy Regulatory Commission (FERC): for example, oil and gas drilling.

BLM may initiate the withdrawal process using the procedures in 43 CFR 2310 for these areas if they are not already withdrawn and will recommend continuing the withdrawal on any areas already withdrawn.

Suitable for restrictive management of water power and reservoir sites.

s currently withdrawn are included here and their continuation or cation will be determined by CSO personnel.

Resource Capability Level 2 (define the second highest priority for management)

Suitable for restrictive management of water power and reservoir sites.

Areas where other resource uses are emphasized in lieu of a permit or license application. Exemptions, preliminary permits and licenses filed through FERC are reviewed on a case-by-case basis as they are received. Use restrictions, and protection of other resources or prohibitions may be negotiated through the FERC as a result of the case-by-case review.
Suitable for restrictive management of water power and reservoir sites.

Resource Capability Level 3 (define the third highest priority for management)

Unsuitable for water power and reservoir sites.

Areas where development of water power or reservoirs is excluded or recommended for exclusion. The plan must include a statement and analysis explaining why development of water power and/or reservoirs is recommended for exclusion. A statement of the potential of the water power sites is to be luded. An example of an area which may fall into this category is a erness area. Existing withdrawals in these areas will be recommended for cation by BLM.

SLRMP MSA

CAPABILITY ANALYSIS FORM 2

MANAGEMENT PRACTICES

Resource Name Water Power Withdrawals

Specialist Name B. Miller Date 2-27-87

Describe the types of management that you would use in RCL 1 areas

Any type of management that would not harm the site for water power purposes.

Describe the types of management you would use in RCL 2 areas

Same as RCL 1 except a Federal Energy Regulatory Commission (FER) review would be necessary if a project of potential adverse consequences was proposed.

Describe the types of management you would use in RCL 3 areas

No water power projects would be allowed such as a wilderness study area or designated area, wild and scenic river study area or designated area, etc.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name B. Miller Area Number (from GIS Theme) _____

Resource Water Power Withdrawal RCL (i.e., 1, 2 or 3) 1

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

None in resource area.

Rationale for RCL

These areas have high potential for water power development and are given the highest priority of use.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name B. Miller Area Number (from GIS Theme) _____

Resource Water Power Withdrawal RCL (i.e., 1, 2 or 3) 2

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

None in resource area.

Rationale for RCL

Other resource values are higher than water power, but any potential adverse consequences must be reviewed by FERC.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name B. Miller Area Number (from GIS Theme) _____

Resource Water Power Withdrawal RCL (i.e., 1, 2 or 3) 3

Date 2-27-87

Description of Area (Species, number of acres, miles, etc.)

The only lands in the SLRA that are currently withdrawn are along the Rio Grande River in the southeast portion of the area. They total about 2440 acres. These lands are presently under study as a Wild and Scenic River and also have been identified as a candidate ACEC.

.onale for RCL

Area where water power development is not feasible or prohibited until decisions are made on the Wild & Scenic status and the ACEC determination.

DATA THEMES

PLS and LST refer to boundaries and BLM ownership as well as other ownership. LDA and LDL includes all types of actions such as withdrawals, R&PP's (Recreation and Public Purposes), ROW's (Rights-of-way), etc. LTA indicates the suitability for disposal of BLM land.

The GIS themes which involve land status are the following:

PLS - Public Land Survey

TRL - Township Ranch Lines

LST - Land Status

- Land Action Area

LDL - Land Action Linear

LTA - Land Tenure Adjustments

REFERENCES

Joe Kuka - BLM, State Office, Water Power

Stu Parker - BLM, Canon City District Office, Realty

Tom Sieverding - BLM, San Luis Resource Area, Area Manager

Land and REsource Management Plan - Rio Grande National Forest

San Luis MFP - San Luis Resource Area

Saguache MFP - San Luis Resource Area

CHAPTER 14

WILDERNESS

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CHAPTER 14--WILDERNESS

RESOURCE AREA PROFILE

Description

The Federal Land Policy &`Management Act (FLPMA) of 1976 (section 603a), directs the Secretary of the Interior and the BLM to inventory public lands under its jurisdiction and identify those with wilderness characteristics. This was completed in 1980. Those identified lands were then studied for determination of suitability or nonsuitability for wilderness designation.

Based on an evaluation of all resource values/uses in each area determined to contain wilderness characteristics, the Secretary must report his recommendations to the President, no later than Oct. 21, 1991, on whether or not areas should be designated as wilderness.

The Bureau also has authority under section 202 of FLPMA to recommend lands for wilderness designation. Four wilderness study areas (WSAs) in the San Luis Resource Area were studied under this authority. These four are Black Canyon, South Piney Creek, Papa Keal, and Zapata Creek, which total 4,910 acres. They all lie adjacent to the western slope of the Sangre de Cristo Range as shown on the GIS wilderness maps. Because of their location, contiguous to the U.S. Forest Service Wilderness Study area, they are included in the Forest Service study of the Sangre de Cristo Range. The Forest Service in 1986 is recommending all the units in most of their entirety for wilderness suitability. This recommendation has not been finalized as of December 1986.

Two WSAs in the resource area are identified under FLPMA section 603(a): the Sand Castle WSA, a 1,644 acre unit contiguous to the Great Sand Dunes Wilderness Area managed by the National Park Service and the San Luis Hills WSA, 10,240 acreas located in the southeast portion of the San Luis Valley. See Table 14-1.

An environmental impact statement is presently being written (1987) that includes these two WSAs and will include management preferences for wilderness suitability. All are shown on GIS maps.

All WSAs have outstanding opportunities for primitive and unconfined recreation, which includes hiking, camping, viewing and hunting wildlife, photography, and other similar activities. The units have few imprints of man, but manmade influences outside the units are visible.

Table 14-1

WSAs IN SAN LUIS VALLEY RESOURCE AREA

BLM UNIT NO.	NAME	ACRES	AUTHORITY UNDER FLPMA SECTION NO.
CO-050-131	Black Canyon	2,300	202
CO-050-132B	South Piney Creek	870	202
CO-050-135	Sand Castle	1,644	603(a)
CO-050-137	Papa Keal	1,020	202
CO-050-139B	Zapata Creek	720	202
CO-050-141	San Luis Hills	10,240	603(a)

Condition and Trend

All the wilderness characteristics identified and inventoried in 1980 remain and are stable. Current trend indicates continued and growing visitor use of WSAs. The "way" in the Black Canyon WSA continues to have use by 4-wheelers. The mining interest of the early 1980's in the lands near the San Luis Hills WSA has ceased.

EXISTING MANAGEMENT SITUATION

Current Management

In accordance with Section 603 of the Federal Land Policy and Management Act, the BLM is required to manage all lands under wilderness review so as not to impair their suitability for wilderness designation. Specific guidance for interim management is provided in BLM's "Interim Management Policy and Guidelines for Lands Under Wilderness Review".

Under the interim management guidance, a proposed activity in a WSA must meet three requirements before it is approved. The activity must (1) be temporary, (2) not cause an impact that will be substantially noticeable following reclamation, and (3) not change the WSAs suitability or nonsuitability for wilderness designation.

However, also under the interim management guidance, a proposed activity that has valid rights does not have to meet the above three requirements. Activities having valid existing rights are allowed to impair wilderness characteristics in a WSA provided there is no unnecessary and undue degradation. Restrictions placed on activities having valid existing rights must not unreasonably interfere with the enjoyment or the benefit of the right.

Valid existing rights apply to mining claims, mineral leases and right-of-way authorizations granted prior to October 21, 1976 the date of the passage of FLPMA.

A proposed powerline bypassed the San Luis Hills WSA in accordance with interim management. The four WSAs adjacent to the U.S. Forest Service WSA are managed in accordance with both BLM and USFS policy and guidelines. Management remains current and involved in growing community interest in Zapata Falls on State of Colorado lands adjacent to the Zapata Creek WSA.

Public participation was and is involved in the entire WSA process.

Supply Demand Analysis

Existing designated wilderness in Colorado by all agencies consist of 2,676,540 acres in 27 various locations throughout the state. Many of these areas are expected to reach their recreational carrying capacity sometime between the years 2000 and 2100 according to state-wide estimates. Some U.S. Forest Service areas already meet carrying capacities in the high use seasons. All of the units are within 2 to 5 hours of the Denver-Front Range metro area and the Albuquerque-Santa Fe metro area.

Demand for wilderness by the public on these remote areas is expected to increase in the adjoining Rio Grande national forest from 122,000 wilderness visitor days in 1980 to 453,000 wilderness visitor days in the year 2030. Five of the WSAs adjoin the National Forest and should receive a comparable rate of increased demand. An increase in demand in the San Luis Hills may not be as high in total number, but the ratio in growth should be similar.

CAPABILITY ANALYSIS

The following forms describe the Resource Capability Levels (RCLs), the management prescription for each RCL, and the specific lands that fall under each category.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Wilderness Specialist Name B. Schneider,

Date 12-01-86

Resource Capability Level 1 (define the highest priority for management)

All six WSAs are to be managed in accordance with the 1964 Wilderness Act, the 1976 FLPMA section 603 and 202, and specifically as directed under the BLM's "Interim Management Policy and Guidelines for Lands Under Wilderness Review." As long as these are WSA's we are required to manage all lands under wilderness review so as not to impair their suitability for wilderness designation. This includes active management and monthly field monitoring of each individual area.

All WSAs after completion of Congressional review, that are designated as wilderness will be managed in accordance with BLM and Congressional directives.

The four WSAs adjoining the U.S. Forest Service Sangre de Cristo WSA will also be managed in accordance with USFS WSA policy.

Resource Capability Level 2 (define the second highest priority for management)

All WSAs no longer managed under WSA interim management or wilderness management should be managed as ACEC (areas of critical environmental concern). This will assure the retention of the qualities that made each of the areas eligible for the wilderness review process. This would be very similar to present interim management guidelines.

The four WSAs adjacent to the USFS WSA, if not included in the forest service wilderness, should be managed as wilderness under BLM direction as outlined under FLPMA section 202.

Resource Capability Level 3 (define the third highest priority for management)

The four WSAs adjacent to USFS WSA should be managed as ACECs in order to assure the retention of the unique qualities that made each of the areas eligible for wilderness review.

The other two WSA's may be managed for multiple-use purposes with retention of the wilderness characteristics a primary goal where feasible.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Wilderness

Specialist Name B. Schneider Date 12-01-86

Describe the types of management that you would use in RCL 1 areas

Wilderness management is provided for in "Interim Management Policy & Guidelines for Lands Under Wilderness Review." Specifically this states that BLM is directed: (1) to perpetuate the wilderness resource by managing designated wilderness areas so that their wilderness character is not impaired; (2) to provide opportunities for the public to use for recreational, scenic, scientific, educational, conservation and historical purposes in a manner so as to leave the wilderness area unimpaired for future use and enjoyment as wilderness; and (3) to accommodate in wilderness areas certain activities, existing uses and private rights which are generally nonconforming to wilderness preservation and use.

Describe the types of management you would use in RCL 2 areas

The four WSAs adjacent to USFS WSA would be managed as stated in RCL 1 above. The other two WSAs would be managed under the defined parameters of ACEC. This requires a detailed management plan that guides the future management of the special resources that are under ACEC designation. This management is defined under 43 CFR 1617.

Describe the types of management you would use in RCL 3 areas

The four WSAs adjacent to the USFS WSA would be managed under parameters of ACEC stated in second paragraph of RCL 2 above.

The other two WSAs would be managed under multiple use management guidelines. No special management designations or techniques of management need be applied but special consideration should be exercised to protect the original wilderness values where feasible and practical.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name B. Schneider Area Number (from GIS Theme) WIL

Resource Wilderness RCL (i.e., 1, 2 or 3) 1

Date 12-01-86

Description of Area (Species, number of acres, miles, etc.)

1.	Black Canyon WSA	2,300 acres	adjoins USFS Sangre de Cristo WSA.
2.	So. Piney Creek WSA	870 acres	adjoins USFS Sangre de Cristo WSA.
3.	Papa Keal WSA	1,020 acres	adjoins USFS Sangre de Cristo WSA.
4.	Zapata Creek WSA	720 acres	adjoins USFS Sangre de Cristo WSA.
5.	Sand Castle WSA	1,644 acres	adjoins NPS Great Sand Dunes Wilderness Area.
6.	San Luis Hills WSA	10,240 acres	southeast portion of San Luis Valley immediately west of Rio Grande.

Rationale for RCL

Congressional mandate states that BLM must study and manage lands with wilderness characteristics until determination for wilderness suitability or nonsuitability is made by the President via the Secretary after 1991.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name B. Schneider Area Number (from GIS Theme) WIL

Resource Wilderness RCL (i.e., 1, 2 or 3) 2

Date 12-01-86

Description of Area (Species, number of acres, miles, etc.)

1.	Black Canyon WSA	2,300 acres	adjoins USFS Sangre de Cristo WSA.
2.	So. Piney Creek WSA	870 acres	adjoins USFS Sangre de Cristo WSA.
3.	Papa Keal WSA	1,020 acres	adjoins USFS Sangre de Cristo WSA.
4.	Zapata Creek WSA	720 acres	adjoins USFS Sangre de Cristo WSA.
5.	Sand Castle WSA	1,644 acres	adjoins NPS Great Sand Dunes Wilderness Area.
6.	San Luis Hills WSA	10,240 acres	southeast portion of San Luis Valley immediately west of Rio Grande.

Rationale for RCL

To protect the wilderness and other unique qualities of the specific areas. This will assure protection of such qualities which are in increasing demand and rare in supply.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name B. Schneider Area Number (from GIS Theme) WIL

Resource Wilderness RCL (i.e., 1, 2 or 3) 3

Date 12-01-86

Description of Area (Species, number of acres, miles, etc.)

1.	Black Canyon WSA	2,300 acres	adjoins USFS Sangre de Cristo WSA.
2.	So. Piney Creek WSA	870 acres	adjoins USFS Sangre de Cristo WSA.
3.	Papa Keal WSA	1,020 acres	adjoins USFS Sangre de Cristo WSA.
4.	Zapata Creek WSA	720 acres	adjoins USFS Sangre de Cristo WSA.
5.	Sand Castle WSA	1,644 acres	adjoins NPS Great Sand Dunes Wilderness Area.
6.	San Luis Hills WSA	10,240 acres	southeast portion of San Luis Valley immediately west of Rio Grande.

Rationale for RCL

Units 1-4 would have unique characteristics protected that gave these areas their original (current) protection.

Units 5 and 6 would be managed so that multiple use factors and management would be allowed while still emphasizing protection of the unique values.

DATA THEMES

The six WSAs are displayed on 7½' USGS quad sheets. The actual bondaries of each of the 6 WSAs is digitized and displayed with the GIS theme, "WIL". The boundaries shown on the map are identical to those which will be presented to the Secretary of Interior in the Canon City District Wilderness FEIS.

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LIST WORK

    47 MAPS IN WORK PROJECT POLYGON

 FORFOXC1    7     FORPL7      3     FORPLB      3     SLFORPLOTY  3
 SLFORPL1    3     SLFORPL1TY  3     SLFORPL2TY  3     SLFORPL3TY  3
 SLFORPL4TY  3     SLFORPL5TY  3     SLFORPL6TY  3     SLFORPL8TY  3
 SLFORPL9TY  3     SLPLB10SLP  3     SLRMLSTOMG  3     SLRMPFORMG  3
 SLRMPFORTY  3     SLRMPLB0    3     SLRMPLB0MG  3     SLRMPLB0SL  3
 SLRMPLB1PW  3     SLRMPLB2PE  3     SLRMPLB3SA  3     SLRMPLB4HH  3
 SLRMPLB5LG  3     SLRMPLB6RG  3     SLRMPLB7BL  3     SLRMPLB8GM  3
 SLRMPLB9MO  3     SLRMPLBMG   3     SLRMPLBUNT  3     SLRMPPLB0M  3
 SLRPLB1PWP  3     SLRPLB2PEP  3     SLRPLB3SAP  3     SLRPLB4HHP  3
 SLRPLB5LGP  3     SLRPLB6RGP  3     SLRPLB7BLP  3     SLRPLB8GMP  3
 SLRPLB9MOP  3     TEMFORP9MG  3     TRNWOLFSAG  7
ENTER COMMAND
 ?  BYE
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REFERENCES

1. "BLM: Intensive Wilderness Inventory, Final Wilderness Study Areas, November 1980, CSO.

2. Draft Environmental Impact Statement, "Canon City District Wilderness Planning Amendment". December 1982, CSO.

3. Land and Resource Management Plan, Rio Grande National Forest.

4. Wilderness Specialist, USFS Regional Office, Denver 5-86.

CHAPTER 15

AREAS OF CRITICAL ENVIRONMENTAL CONCERNS

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CHAPTER 15--AREAS OF CRITICAL ENVIRONMENTAL CONCERN

RESOURCE AREA PROFILE

Description

There are no formally designated areas of critical environmental concern (ACEC) presently located in the San Luis Resource Area. There is one area that has been formally withdrawn; the Blanca Management Area. However, it has no special designation.

Table 15-1 presents the potential ACECs that have been identified to date by the BLM, the public, and the state of Colorado.

TABLE 15-1
POTENTIAL ACECS IN SLRA

No.	Potential ACEC Name	Regional or National Significant Site Values	Proposed By
1	Black Canyon	WSA Natural Area, (Scenic, Recreation)	BLM
2	South Piney Creek	WSA (Scenic, Recreation)	BLM
3	Sand Castle	WSA (Scenic, Recreation)	BLM
4	Papa Keal	WSA (Scenic, Recreation)	BLM
5	Zapata Creek	WSA (Scenic, Recreation)	BLM
6	San Luis Hills	WSA (Scenic, Recreation)	BLM
7	Blanca Area	Wildlife Habitat, Recreation	BLM
8	Trickle Mtn. Area	Wildlife Habitat, Recreation, T&E Plant Area	BLM
9	Rio Grande Wild & Scenic	Recreation, Scenic, and Cultural	BLM
10	Elephant Rock Area	T&E Plants and Natural Area	State of Colo.
11	Cattleguard Folsom Site	Cultural Research of	National Significance BLM
12	Twin Peaks 1/	Scenic, Recreation	BLM
13	Flat Top	Scenic, T&E Plants and Wildlife Habitat	BLM/State of Colo.

1/ Twin Peaks and Rio Grande Wild and Scenic River areas are adjacent and may be combined into one ACEC.

The list of "potential" ACECs represents those areas currently under consideration as wilderness study areas (WSA), withdrawn areas that have been identified as having "special management" needs as per the 43 CFR 1617 regulations, areas that were inventoried as wilderness areas but did not meet the criteria for WSAs, and areas that have been identified by state, local, or private concerns.

Condition and Trend

The following sites have been identified as having potential ACEC values. Present condition and trend are shown in Table 15-2.

TABLE 15-2
PRESENT CONDITION AND TREND OF POTENTIAL ACEC'S

Potential ACEC Name	Present Condition 1/	Present Trend 2/
Black Canyon	Good (WSA)	Stable
South Piney Creek	Good (WSA)	Stable
Sand Castle	Good (WSA)	Stable
Papa Keal	Good (WSA)	Stable
Zapata Creek	Good (WSA)	Stable
San Luis Hills	Good (WSA)	Stable
Blanca Area	Improving	Improving
Trickle Mtn. Area	Deteriorating	Deteriorating
Rio Grande Wild & Scenic	Poor, Deteriorating	Deteriorating
Elephant Rock Area	Good	Stable
Cattleguard Folsom Site	Eroding, vandalism	Deteriorating
Twin Peaks	Good	Stable
Flat Top	Good	Stable

1/ Condition is defined here as the relative conditon of those values that cause sites to be considered for ACEC designation. This can include environmental values, roadlessness, lack of human intrusions, scenic values, cultural values, and the ACEC criteria as defined in 43 CFR 1617. The conditon of these factors add up to total "site conditon".

2/ Trend is defined here as the tendency for the continuation of existing condition (defined above) to remain constant. Trend means what is happening to those conditons and values of potential ACECs and what will happen to them if current management continues unchanged.

EXISTING MANAGEMENT SITUATION

Current Management

Currently, the Blanca Wildlife Area, because it is withdrawn, is managed as a "special" area. There are restrictions on the use of this area. For example, mineral entry is prohibited. Equally, WSAs are managed as interim wilderness so as not to change their integrity or to compromise them as potential wilderness areas. The Trickle Mountain Area is managed for wildlife enhancement, while the Cattleguard Folsom Site is being excavated by the Smithsonian Institution and is managed as a nationally recognized unique cultural site. Finally, two recently identified rare plant sites are not under any special management pending evaluation (Trickle and Flat Top).

The following BLM WSAs are adjacent to proposed U.S. Forest Service wilderness areas:

Black Canyon
Zapata creek
South Piney Creek
Papa Keal

These WSAs may become part of the Forest Service wilderness system when designation legislation is proposed. The BLM areas could be attached to adjacent National Forest wilderness areas. If this occurs, the BLM areas would not be designated ACECs as they would become part of the National Forest system.

One BLM WSA, Sand Castle, is located adjacent to the San Dunes National Mnument. It has not been recommended for wilderness status. It may be merged into the Monument, and if the occurs, Sand Castle will not be designated an ACEC since it would be part of the Monument.

Supply-Demand Analysis and Dependency

ACECs normally have no economic demand nor supply attached to them. The demand generated is primarily based on the resources and their values. Such demand is determined by unique and significant resource values, not public need. Regional or national significance is an indication of this demand.

Supply of ACECs is determined by the amount of unique resources, availability, and their relative scarcity. This supply must be considered in light of other competing demands, multiple-use needs, and management decisions.

CAPABILITY ANALYSIS (CA)

The following forms describe the definition of the capability resource levels (RCL's), and the management practices to be applied to each particular RCL. Table 15-3 presents the specific sites within each of these RCL.

SLRMP MSA

CAPABILITY ANALYSIS FORM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Areas of Critical Environmental Concern (ACEC)

Specialist Name R. Athearn Date 11/13/1986

Resource Capability Level 1 (define the highest priority for management)

The designation of an area as an ACEC defines special management areas (SMA) as a site/or area that requires special management techniques, that are defined by the management plan created from an ACEC designation. An ACEC requires special management techniques and recognition of unique values within the boudnaries of the designated ACEC.

Resource Capability Level 2 (define the second highest priority for management)

Areas that have special or unique values can be managed without a formal ACEC designation, but they can also be managed through administrative means such as limiting grazing, no surface occupancy, etc. These areas are not designated formally as "ACECs," but may be specially managed through normal administrative channels if it is decided that certain values require protection.

Resource Capability Level 3 (define the third highest priority for management)

Those areas where no reasonable special management actions can be taken to protect the resource from irreparable damage or to restore it to a viable condition. Such areas can be "special" and may have unique resource values; but, they simply cannot be protected from damage no matter what kind of special management is applied to the land. Therefore, while the values may be there, special management designation is not appropriate for this type of resource/site.

SLRMP MSA

CAPABILITY ANALYSIS FORM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Areas of Critical Environmental Concern (ACEC)

Specialist Name R. Athearn Date 11/13/1986

Describe the types of management that you would use in RCL 1 areas

This level implies that a site/area has been formally designated as an ACEC and that it must be managed within parameters defined in the management plan that must be prepared for each ACEC. This type of area requires a detailed management plan to guide the future of the special or unique resources under ACEC designation. Such management is defined in 43 CFR 1617.8 and is part of the ACEC designation process.

Describe the types of management you would use in RCL 2 areas

This level of management is for an area that may not have a formal designation, but it may have special or unique values that require special management to preserve the resources at hand. Through administrative remedy, this type of site may be protected by using such techniques as no surface occupancy, limitation of grazing, withdrawal, fencing, etc. This type of management is less stringent than RCL 1 areas, but it also provides the manager with more flexibility in making land use allocation decisions.

Describe the types of management you would use in RCL 3 areas

This level of management is for an area that may have special or unique values, but because no reasonable special management actions can be taken to protect these values, no special management (ACEC) designation or management techniques are needed. This situation may also apply to areas where the "unique" values are marginal in nature, but, they are known to exist because of prior identification.

DATA THEMES

(STILL MISSING)

(Need description of theme data to include quad by quad listing).

REFERENCES

(STILL MISSING)

TABLE 2-3

POTENTIAL AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)

(43 CFR 1617.8)

Potential ACEC	1) Relevance (Significant Value Resource, Processor Hazard)			2) Importance (More than Local Significance, Special Worth or Meaning)			
	a) Known Threats	b) Potential Threats/Risks	c) Management Desire Prior to RMP	a) Resource Qualities	b) Sig. Threat to Life/Safety	c) Regional/ National	RCL No.
1. Black Canyon	None	None, Mining	WSA	Scenic, Rec. and Nat.	None	Yes	2
2. South Piney Cr	None	None, Mining	WSA	Scenic, Recreation	None	Yes	2
3. Sand Castle	None, OVR Disturbance	None, Mining	WSA	Scenic, Recreation	None	Yes	2
4. Papa Keal	None	None, Mining	WSA	Scenic, Recreation	None	Yes	2
5. Zapata Creek	None, Uncontrolled Rec. use	None, Mining	WSA	Scenic, Recreation	None	Yes	2
6. San Luis Hills	Mining	Mining	WSA	Scenic, Recreation	None	Yes	2
7. Blanca Area	None	None, Loss of Water Sources	Withdrawal Wildlife HMP	Wildlife Habitat, Recreation	None	Yes	2
8. Trickle Mtn.	None	None, Grazing and Mining	Wildlife HMP	Wildlife Habitat, Rec. and T&E Plants	None	Yes	2 1/
9. Rio Grande W/S River Area	Uncontrolled Rec Use, Listed Trespasses	Mining, Development	Recreation, Cultural	Recreation, Scenic, Cultural	None, Uncontrolled Recreation Use	Yes	2 1/
10. Elephant Rock	None	Grazing, Mining	Multiple Use	T&E Plants, Natural Area	None	Yes	2
11. Cattleguard Folsom Site	Vandalism, Erosion	Vandalism, Erosion	Research	Cultural Values of National Significance	None	Yes	1
12. Twin Peaks	None	None, Mining	Recreation	Recreation, Scenic	None	Yes	2 2/
13. Flat Top	None	None, Mining	Multiple Use	T&E Plants, Scenic, & Wildlife Habitat	None	Yes	1/ 2 3/

1/ Public comments requested that this site should be studied for possible ACEC disgnations.

2/ Twin Peaks is adjacent to the Rio Grande W/S River Area and they may be combined into one ACEC

CHAPTER 16

ACCESS AND TRANSPORTATION

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CHAPTER 16--ACCESS AND TRANSPORTATION

RESOURCE AREA PROFILE (RAP)

Description of Resource

Approximately _____ miles of road throughout the San Luis Resource area provide physical and/or legal access to public lands. These roads are located on federal, state, and private lands. There are miles of federal and state highways that run through the resource area. Roads in the Alamosa, Conejos, Rio Grande, and Saquache counties provide _____ miles of road that are important to the RESOURCE AREA TRANSPORTATION SYSTEM. These roads are shown on Map 16-1 (county roads in the San Luis Resource Area).

County roads are very important in providing legal access to public lands, this helps the BLM in its ability to manage these lands.

Condition and Trend

The majority of roads on the public land were not constructed by the BLM but originated as trails used primarily by recreationists. Most of these roads are in poor condition and do not meet BLM road standards. Roads under BLM control are not maintained regularly, and many would require reconstruction and realignment to accommodate any increased use.

These roads are usually passable only during dry weather, and many require four-wheel drive and high clearance vehicles. During wet weather these vehicles cause considerable damage to roads.

Most of the roads are deteriorating from erosion because they lack regular maintenance. Only one wildlife habitat-related road has been built properly and receives adequate maintenance to stay in good condition.

A few segments of roads to public lands have no legal access. The access is controlled by adjacent private property owners who close the roads to the public. However, the resource area is working on acquiring road easements in identified areas where there is no legal access. On a overall bases the resource area has good legal access. Access to public lands for which a demand exists because of multiple use opportunities, is good.

EXISTING MANAGEMENT SITUATION

Current Management

The existing transportation system for the resource area consists of federal, state, and primary county roads that receive frequent maintenance and secondary country roads, private roads, and BLM managed roads that receive infrequent or no maintenance. The public road system (federal and state highways and county roads) is an integral part of the transportation system for providing access to public lands. Roads receiving state, county or BLM maintenance are shown on Map 16-2. There are _____ miles of BLM roads identified on the resource areas transportation plan. There are ____ miles of these roads that are maintained by the BLM. Those roads maintained periodically by the private sector are not identified due to the lack of data for this maintenance.

Access to a few areas of the public lands are controlled by adjacent private landowners. Their restrictions on access to public lands prevent multiple use management on those portions of the public lands. However, the few areas this problem exists have been identified and easement acquisitions are being planned.

The BLM and the intermixed private and county road systems provide access for livestock, forestry, recreation and BLM management. Many of the roads on public lands are only passable during dry weather. Travel on these roads during adverse conditions by four-wheel drive vehicles causes serious erosion problems and impacts to other resources.

During recent years the resource area has posted seasonal closures on many public roads to protect the fragile resources and for public safety reasons. A few roads have been designated as open, closed or limited to off road vehicle(ORV) use.

Roads on the public lands that are utilized frequently by various users have been maintained infrequently by the BLM when funds are available. These roads are maintained under the guidelines and recommendations of the San Luis Resource Area management framework plan and other BLM maintenance polices.

Supply-Demand Analysis and Dependency

Demands for transportation needs in the resource area are directly related to resources found on public lands. This includes demands for commercial activities, such as, livestock grazing, forestry, minerals and noncommercial type activities, such as using ORV's, hunting, camping, fuelwood gathering, Christmas trees cutting, and other recreational uses.

The road system for using the public lands is inadequate in many areas. Adequate funding and support have not been available to correct this situation. Legal public access is needed in many identified areas to allow the BLM to carry out multiple use management.

There are some areas with numerous roads into critical wildlife ranges and fragile environments. This access causes impacts to various resources and users of public lands. Major impacts are felt by soil, water, cultural and wildlife resources. Also, restrictions to access only for BLM administrative purposes and permittees are used in some areas (Service Rds., etc.).

CAPABILITY ANALYSIS

The following forms describe the definition of the capability resource levels (RCLs), the management practices to be applied to each road, in that particular RCL, and the specific roads within each RCL.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Transportation & Access Specialist Name F. Martinez

Date 12-1 -86

Resource Capability Level 1 (define the highest priority for management)

Collector Road - These are high volume roads used primarily for recreational purposes and demand the highest need for preventive maintenance.

Resource Capability Level 2 (define the second highest priority for management)

Local Roads - These are considered medium duty roads. They provide access to potentially high multiple use areas. These roads are generally stable but demand periodic maintenance.

Resource Capability Level 3 (define the third highest priority for management)

Resource Roads - These are considered to be light duty roads: They are primarily used by permittee and for BLM administrative purposes and demand spot maintenance.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Transportation and Access

Specialist Name F. Martinez Date 12-1-86

Describe the types of management that you would use in RCL 1 areas

Keep and maintain signs and provide preventive maintenance on a yearly bases.

Describe the types of management you would use in RCL 2 areas

Provide signs indicating road name and number and maintain road on a three year cycle.

Describe the types of management you would use in RCL 3 areas

Provide restrictive signs and provide spot maintenance on a five year cycle.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name F. Martinez Area Number (from GIS Theme) TRN

Resource Transportation & Access RCL (i.e., 1, 2 or 3) 1

Date 12-1-86

Description of Area (Species, number of acres, miles, etc.)

There are _____ miles of collector roads in the San Luis Resource area public lands.

Rationale for RCL

There exists in the resource area a high user demand for these roads. The access availability is very good.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name F. Martinez Area Number (from GIS Theme) TRN

Resource Transportation & Access RCL (i.e., 1, 2 or 3) 2

Date 12-1-86

Description of Area (Species, number of acres, miles, etc.)

There are _____ miles of local roads in the San Luis Resource area.

Rationale for RCL

These roads provide access to the resource area's multiple use areas. Legal access to most areas of the public land is considered to be good. However, a few areas have been identified with no legal access. Easement acquisitions are being sought in those areas of potentially high multiple use.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name F. Martinez Area Number (from GIS Theme) TRN

Resource Transportation & Access RCL (i.e., 1, 2 or 3) 3

Date 12-1-86

Description of Area (Species, number of acres, miles, etc.)

There are _____ miles of local roads in the San Luis Resource area.

Rationale for RCL

These are considered restricted roads and have no legal access problems.

DATA THEMES

(STILL MISSING)

NOTE: Need a description of the GIS themes, how they can be used, what is the content, to include a listing of guads used.

REFERENCES

(STILL MISSING)

NOTE: Need all reports persons, agencies, etc., used in putting together this chapter.

CHAPTER 17

RECREATION

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CHAPTER 17--RECREATION

RESOURCE AREA PROFILE

Description

The San Luis Valley Resource Area is divided into two areas for recreation management purposes. The Rio Grande Special Recreation Management Area (SRMA) comprises approximately 2,560 acres of public land adjoining the west bank of the rivers. It commences at the Lobotos bridge, east of the community of Antonito, and extends 8 miles south to the New Mexico State line. This area provides an outstanding primitive float boat opportunity as well as fishing, viewing, hiking, and camping, all in a semiprimitive setting. The private land at the Lobotos bridge site provides the only southern point for vehicle and boat access to the final 8 miles of the river in the state and for some distance into New Mexico. This SRMA adjoins the Taos Resource Area where the Rio Grande is a National Wild and Scenic River already. That resource area applies special recreation management emphasis on their stretch of the Rio grande river.

The vast majority of the resource area is managed as the San Luis Extensive Recreation Management Area. This includes approximately 516,000 acres in four recreational opportunity settings (see Table 17-1 for definition and breakdown). There are no developed recreational facilities except for those in the Blanca Management Area. That area has a network of basically three

roads providing access to three restrooms with parking areas and trash receptacles. The area provides excellent wildlife viewing, hunting, and fishing opportunities. A number of trails and entrance ladders are provided for public participation in the above mentioned activities as well as picnicking, hiking, camping, and nature study opportunities.

The majority of the Blanca Management area provides for dispersed recreation activities which occur outside of designated sites. The variety of appealing land forms, from mountains to valleys; vegetation from trees to sage; and a variety of topography, from sand dunes to mountain streams offer a significant number of diverse outdoor recreational activities. Specific recreation opportunities available include: Hunting, fishing, viewing, off-road vehicle (ORV) use, hiking, picnicking, camping, vegetative and mineral gathering, snow-mobiling, cross-country skiing, general leisure, and sightseeing.

TABLE 17-1
RECREATION OPPORTUNITY SPECTRUM CLASSIFICATION

ROS SETTING CLASS 1/	ACRES	% OF RESOURCE AREA
Semi-primitive nonmotorized (SPNM) Semi-primitive motorized (SPM) Roaded Natural (RN) Rural (R)		
TOTAL	522,000	100%

1/ Definitions:

Recreation Opportunity Spectrum ROS = Professional description of recreation opportunities using the concept of a spectrum.

SPNM = ½ mile from any road, no noticeable visual or audio intrusions

SPM = ½ mile from any improved road, no noticeable visual or audio intrusions

RN = ¼ mile from any primary or secondary road, no visual intrusion in foreground
R = Ø miles from any road - all roads accepted

Condition and Trend

The overall condition of the recreation settings is good with some exceptions. Those exceptions include a few sites being degraded from intensive camping along the flanks of the Sangre de Cristos and in the Trickle Mountain area. The recreational facilities at Blanca Management Area have been periodically vandalized and signing is almost nonexistent. The private land used by the recreating public at Lobotos bridge is deteriorating from lack of public control facilities and livestock trespass.

Factors such as population growth and more leisure time are expected to bring about an increase in most recreational activities. There has been an increase in float boat activity on the Rio Grande reflecting the national trend. The ORV restrictions on Trickle Mountain have stabilized quality of the resources but this may prove to be only temporary. An increase in ORV demand and lack of adequate funding for management and maintenance may allow for further deterioration of the recreation quality and land resource.

The U.S. Forest Service makes the following projection trends for recreation in the Rio Grande National Forest. Total dispersed recreation use will continue to increase at a rate of about 6.9 percent per decade. As travel expenses increase, the amount of dispersed recreation use by local residents will increase and visitors will lengthen the duration of their visits.

The 1986 Colorado Outdoor Recreation Plan is very general. It anticipated 5.6 percent regional growth and recommends a high priority for picnicking, fishing, hunting, and snowmobiling.

EXISTING MANAGEMENT SITUATION

Current Management

The San Luis Valley Resource Area recreation management and maintenance program has been and continues to be severely constrained by budget limitations. Those active functions that do occur can be classified as 1) minimal maintenance of the facilities at Blanca Management Area; 2) seasonal closures of some roads for resource protection; 3) issuance of commercial recreation use permits for upland game outfitters and a dog trials event. (The Taos Resource Area issues all commercial river permits for the Rio Grande); 4) provision for activity and resource information in response to public requests; 5) coordination of group uses and events occurring on BLM lands; and 6) provision for constrains of other resource use proposals to protect recreation resources. In all of the above functions, very little compliance, monitoring, or maintenance occurs, and that which does occur is reduced annually.

Approximately one-half work month annually is provided to maintain the three recreation facilities at Blanca Management Area. A map and a few location signs exist within the area. There are no signs outside the area to direct the public into the area. Vandalism is a reoccurring problem. Resource interpretive signing, proper maintenance of camping and picnicking facilities, and monitoring of recreational use is extremely inadequate. Present management policy is to discourage the use of this recreation resource..

An ORV plan was written for the Trickle Mountain Area, and implemented in the fall of 1979. This limits recreational ORV use to designated roads. Initially this plan benefited the resource and recreating public. However, since the inception of this plan, no funding has been available for further implementation, maintenance, or monitoring. The trend is towards further deterioration of the area. The remainder of the Resource Area is open to ORV use with the exception of seasonal ORV closures because of muddy roads or critical wildlife habitat. These seasonal closures have occurred in the Mogotes-Poso-RaJadero area and in the Poncha Pass area.

A few recreation use permits for commercial upland game outfitting are issued. Due to funding limitations, no monitoring of use is conducted. Information from other agencies who do monitor use on their lands indicate that anywhere from 6 to 10 commercial outfitters probably use BLM lands. Some of these outfitters are under permit issued by other BLM offices. The BLM office in Taos administers the permit system for the Rio Grande under verbal agreement with the Alamosa office. This is facilitated by the fact that all boat activity that occurs adjacent to BLM lands in Colorado must exit in New Mexico in the Taos Resource Area.

Currently an active land exchange is being pursued to obtain the private land around the Lobotos Bridge area on the Rio Grande. When this exchange is completed it will provide assurance of public access to the river. The BLM will acquire land suitable for development of facilities and public recreational use which is in great demand in this area. The current landowner has allowed public use of the site and granted permission for a boaters registration box.

The provision of public information is an increasing program workload. There is an increasing amount of public interest in using public lands for a variety of recreational activities. Complete lack of directional signing on public lands adds to this tremendously unmet need.

There has been an annual dog trials event at Blanca Management Area that attracts regional participation and numbers of participants are increasing. There have also been several ORV events on BLM lands in the past although present use has shifted to private and Forest Service lands. This shift has been for economic purposes and eliminates the dual permit expenditure by the sponsors of the events.

Recreation concerns constrain other resource proposals. For example, projects such as water lines, powerlines, and roads are often routed to avoid areas of sensitive recreational values. All attempts are made to minimize and mitigate adverse impacts to recreational resources.

Increasing use and abuse of the recreational resource will require more intensive recreational management and consequently a need for funding.

Supply-Demand Analysis

The recreation opportunity spectrum is displayed on the GIS maps. This shows the spectrum of opportunities and settings available in the resource area. These settings range from semiprimitive nonmotorized to rural as explained under the RAP description section.

In addition to the opportunities supplied by the BLM, other agencies in the San Luis Valley provide recreational opportunities. The Great Sand Dunes National Monument is a national attraction and offers superb quality sand dunes for hiking, camping, viewing, nature studies, and wilderness experiences. There are two National Wildlife Refuges in the valley that offer the whole spectrum of quality wildlife associated activities. The Rio Grande National Forest on both the east and west flanks of the valley offers almost the entire spectrum of recreational opportunities and settings.

The BLM provides the settings and opportunities described earlier. Another very key role of BLM lands is to provide access to the recreational lands of the U.S. Forest Service. The demand for the BLM resource is both local and regional in scope. The Rio Grande Special Recreation Management Area (SRMA) has a regional demand with the potential for national demand for the float boat activity. Other potential demand activities at this site are river hiking, picnicking, camping, scenic viewing, and cultural interpretation. The national monument and Federal wildlife refuges have national significance and demand.

CAPABILITY ANALYSIS (CA)

The following forms describe the definition of the capability resource levels (RCL's), the management practices to be applied to each particular RCL, and the specific site(s) that fall within each RCL.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Recreation Specialist Name B. Schneider

Date 11-22-86

Resource Capability Level 1 (define the highest priority for management)

Areas of public land where recreation related public issues and management concerns are significant. These issues and concerns fall into two categories:

1. Areas where resource protection or management action is needed to ensure the continued availability of outdoor recreation opportunities not readily available from other public or private sources. Recreation is the principal management objective.

2. Areas where active recreation use management (people management) is needed to mitigate use conflicts and protect visitor health and safety. Recreation may not be the principal resource management concern.

Resource Capability Level 2 (define the second highest priority for management)

Areas where public recreation related issues and management concerns are significant, but are related to ensuring the continued availability of high quality dispersed recreational opportunities. Recreation is an important land use in a multiple use perspective.

Resource Capability Level 3 (define the third highest priority for management)

Areas where dispersed recreational use occurs but other resource uses dominate land use.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Recreation

Specialist Name B. Schneider Date 11-22-86

Describe the types of management that you would use in RCL 1 areas

1. Areas where resource protection is needed: Management actions could include wild and scenic designations for natural and/or scenic value, activity plans for SRMAs, designation of ORV areas as "closed" or "limited" in response to public issue identification, recreation lands designation, and pursut of appropriate withdrawals to protect recreation opportunities.

2. Areas where active recreation management is needed: Active field presence of Bureau personnel during high use periods and in use conflict areas, active information and education programs with signs, brochures, news releases, activity involvement, and acquisition of access.

Describe the types of management you would use in RCL 2 areas

Ensure that conflicting land uses are constrained to minimize adverse impacts to important recreation opportunities in each area. Signing and information/education materials may be developed in response to public needs. Where there are no significant land use issues, designable public lands as "open" to ORV use, and acquire access.

Describe the types of management you would use in RCL 3 areas

Some information signs and materials may be provided to support the public needs for dispersed outdoor recreation opportunities. Constraints on recreational use will be minimal. Restrictions on other resource uses will follow established multiple use principals to ensure long-term protection of resource values, but will not be significantly constrained in the short term by recreation related concerns.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name B. Schneider Area Number (from GIS Theme) REC (SPNM)

Resource Recreation RCL (i.e., 1, 2 or 3) 1a

Date _____

Description of Area (Species, number of acres, miles, etc.)

Rio Grande SRMA: 2,560 acres on west side of river for approximately one quarter to one half mile (from river to top of rim-rock). From the Lobotos Bridge to New Mexico state line, a distance of 8 miles.

SPNM acres = _____

SPM acres = _____

RN acres = _____

Rationale for RCL

Offers outstanding scenic, natural, cultural, wildlife wilderness, and recreation values. River setting and opportunities provided here are not available from other public or private sources with the exception of the same river and resources in the state of New Mexico where it is designated as a wild and scenic river when it enters New Mexico.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name B. Schneider Area Number (from GIS Theme) REC

Resource Recreation RCL (i.e., 1, 2 or 3) 1b

Date _____

Description of Area (Species, number of acres, miles, etc.)

San Luis Valley Extensive Recreation Management Area:

SPNM acres = _____

SPM acres = _____

RN acres = _____

R acres = _____

This will include the 52,000+ acres of the Trickle Mountain ORV area; approximately 13,000 acres of the San Luis Hills; and 3,900+ acres of the Blanca Management Area.

Rationale for RCL

An ORV plan has been written and approved with public input for the Trickle Mountain Area. Public issue identification has created a need for ORV designation of the San Luis Hills and Blanca Management Area to mitigate conflicts and resource impacts. Active recreation management is needed to protect the recreational and other values at Blanca.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name B. Schneider Area Number (from GIS Theme) REC

Resource Recreation RCL (i.e., 1, 2 or 3) 2

Date _____

Description of Area (Species, number of acres, miles, etc.)

San Luis Extensive Recreation Management Area.

SPNM acres = _____

SPM acres = _____

RN acres = _____

R acres = _____

Zapata Falls portion of Blanca Planning Unit
Remainder of Saguache Planning Unit not in RCL 1
Rio Grande Planning Unit
ORV portions of Greenie Mountain Planning Unit.

Rationale for RCL

Recreation is an important land (one of the major resources but not the major resource) use in a multiple use perspective. Recreation settings and activity opportunities ensure the continued availability of high quality dispersed recreational opportunities on public lands. Failure to provide opportunities on BLM could mean loss of some activities and would move use onto USFS lands where use in some cases would exceed theoretical capacity. There is very little, if any, opportunity for such activities on private land with notable exceptions of camping, picnicking, and hunting.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name B. Schneider Area Number (from GIS Theme) REC

Resource Recreation RCL (i.e., 1, 2 or 3) 3

Date _____

Description of Area (Species, number of acres, miles, etc.)

San Luis Extensive Recreation Management Area. All of remainder of Resource Area not under RCL 1 or 2.

SPNM acres = _____

SPM acres = _____

RN acres = _____

R acres = _____

Zapata Falls portion of Blanca Planning Unit
Remainder of Saguache Planning Unit not in RCL 1
Rio Grande Planning Unit
ORV portions of Greenie Mountain Planning Unit.

Rationale for RCL

Provision for dispersed recreational use where it will not be in conflict with other resources. This will require minimal management and maintenance. Recreational demand will be met here for nonintensive use with assurances of protection of all resource values.

DATA THEMES

Four of the ROS setting classes are displayed on all BLM lands in the resource area in GIS theme "REC". They are now limited to BLM lands alone and include some private lands. They are presented on 7½" USGS quad sheets. They include the setting classes:

SPNM = Semi primitive nonmotorized

SPM = Semi primitive motorized

RN = Roaded natural

R = Rural

These are further defined on Page 3 of Recreation MSA.

REFERENCES

1. Land and Resource Management Plan Rio Grande National Forest.

2. SCORP, 1986, Colorado Department. Plans and Wildlife Recreatory.

3. Ecological Land Unit, Recreation Capability classification Handbook and Classification Manual CSO 1979.

CHAPTER 18

VISUAL RESOURCES

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CHAPTER 18

VISUAL RESOURCE MANAGEMENT

RESOURCE AREA PROFILE

Description

The visual resources of the resource area have been classified in accordance with BLM Manual 8400. The classification process considers scenic quality and visual and public sensitivity which produce a Visual Resource Management (VRM) numerical classification. The resource area has four classes, numbered II to V. The lower the class number the more sensitive and scenic the area. Table 18-1 is an acreage table of the 4 classes in the Resource Area.

TABLE 18. VRM Acreage in SLRA

VRM Class	Acreage	% of R.A.
II		
III		
IV		
V		

All of the classes in the valley are shown on GIS maps.

The lone Class V area is the Blanca chaining, northwest of the community of Blanca. A Class V area is one where the natural character of the landscape has been disturbed to a point where rehabilitation is needed to bring it up to one of the four other classifications. There is potential to increase the visual quality of the landscape through thru prudent management. This area is adjacent to Colorado State Highway 150, which is the major access route to the Great Sand Dunes National Monument. The chaining is readily visible from the center of the valley. It draws comment and attention from tourists to the valley for the first time because of its distinct line and contrast in color and texture as a result of total tree removal for livestock grazing.

There are other localized areas such as borrow pits or fence line clearings that need visual rehabilitation but they are local in impact and extent. The highest value scenic resources are the Sangre de Cristo mountains on the east, and the San Juans on the west. Their scenic beauty is one of the major resources attracting tourists to the San Luis Valley. The valley, actually a "park", since it is encircled by mountains, is such a flat open expanse that any visual disturbance on the foothills or mountains is readily observable.

Growing public sensitivity to visual resources is readily apparent along U.S. Highway 285 between Alamosa and Antonito, Colorado. Local artists began painting scenic murals on buildings, silos, and other objects in 1985. These large murals depict wildlife, scenery, and cultural occurrences of the immediate area. The number of murals increased in 1986 and have drawn considerable favorable comment from locals and tourists alike. This is an obvious indication of local visual sensitivity and interest.

Condition and Trend

The trend in landscapes in the valley is a gradual change from natural and pastoral toward development, particularly in the southern and central portion of the resource area. Development features that have influenced landscapes include electrical power generation, highways, pipelines, irrigation circles, some mine or gravel pits, and various residential areas with their associated services.

Any disturbance of the viewshed is readily observable. Most of the viewshed is public land, either BLM or Forest Service. Both agencies currently are concerned with the visual resource and the impact management can have upon the landscape. Presently they set the visual standard for the remainder of the valley to follow.

The Blanca chaining is slowly revegetating with trees. Perhaps natural regeneration will return the area to its original character in 40 to 50 years. Management practices could hasten improvement of this area.

EXISTING MANAGEMENT SITUATION

Current Management

In the recent past the district and state offices had personnel directly assigned to visual resource management. This was an active program that worked directly with project development. Budget limitations have constrained VRM recently. However, the visual resource classes are used as management standards for any proposed development or landscape alteration activities.

Scenic resources are considered in most proposed projects significant enough to result in a visual impact. The classification standards are considered, and in some cases VRM expertise is even requested, to aid in mitigating adverse visual impacts. Recent state office policy has been to emphasize working with project proponents to accommodate and reasonably mitigate visual impacts.

VRM assistance has been used in an attempt to mitigate the visual disharmony of the Blanca chaining. Forestry practices are proposed to feather the changing edges to break up the sharp contrasting linear features. All new structures are painted in colors that are in harmony with the surrounding environment. Current management awareness of the visual resource would prevent a chaining such as the one on Blanca would from occurring today.

Supply-Demand Analysis

The supply of visual resource qualities and public demand (sensitivity) for these resources is taken into account in the VRM analysis. From this analysis the visual resource management classifications are produced. Tourism, a major attraction to the valley is dependent on the scenic resource. Along with tourism, such items as real estate values and quality of life factors relate strongly to the Class II areas in the resource area. All indicators show that demand will continue to grow for quality visual resources. The lands around Crestone have attracted a small development of high income residential and international groups. The major attraction here is the superlative scenery. Some of the reasons for settlement given by international groups is the scenic beauty of this area similar to that in the Himalayas. This would indicate that the supply of such a scenic resource, while arguably unique in Colorado, is of outstanding national value.

Capability Analysis

The following forms describe the definition of the capability resource levels (RCL's), the management practices to be applied to each particular RCL and the specific site(s) within each RCL.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Visual Resource Management Specialist Name B. Schneider

Date 12-01-86

Resource Capability Level 1 (define the highest priority for management)

VRM Class II areas. These areas have the highest visual resource management concern based on the combined importance of scenic quality, visibility, and visual sensitivity.

VRM Class V area. This area (Blanca chaining) is one where the natural character has been disturbed to the point where rehabilitation is needed to bring it up to one of the four VRM classes.

Assure that all proposed landscape disturbing activities adhere to VRM guidelines to maintain visual class existing in area prior to activity.

Resource Capability Level 2 (define the second highest priority for management)

VRM Class III & IV areas. These are areas with moderate resource management concern based on the combined importance of scenic quality, visibility, and visual sensitivity.

Assure that all proposed landscape disturbing activities do not lessen the existing VRM class.

Resource Capability Level 3 (define the third highest priority for management)

Assure that VRM guidelines are followed in Class III & IV areas. Do not allow any landscape disturbing activity to lessen the VRM class by more than one (e.g., a II to a III, III to IV).

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Visual Resource Management

Specialist Name Bill Schneider Date 1/87

Describe the types of management that you would use in RCL 1 areas

Those highly scenic Class II areas may be designated as ACECs for visual resource protection. Management activities in Class II areas will be constrained as necessary to maintain a natural visual setting in the characteristic landscape. Manage the characteristic landscape to provide sustained economic viability for the recreation/tourist industry in the local area. Rehabilitate the Class V areas by using management techniques to lessen the visual contrast and bring back the original VRM Class number to the landscape.

Describe the types of management you would use in RCL 2 areas

Reasonably constrain management activities in Class III and IV areas so that unnatural visual impacts will not occur or are such to be visibly minimal in extent. In all cases proposed activities will be designed to attempt to fit in as much as reasonably possible into the characteristic landscape.

Describe the types of management you would use in RCL 3 areas

Protect the visual quality through mitigating measures designed to reduce the degree of contract with the surrounding landscape. Management activities may result in noticeable landscape change, but practice reasonable constraint. Use constraint through addition, subtraction, or alteration of elements of the landscape such as vegetation, rockform, water features, or structures.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Bill Schneider Area Number (from GIS Theme) VRM

Resource Visual Resources RCL (i.e., 1, 2 or 3) 1

Date 1/87

Description of Area (Species, number of acres, miles, etc.)

VRM Class II areas are the most scenic and most sensitive of all the visual zones in the resource area. They comprise _____ acres and are usually located on the higher elevations surrounding the resource area; e.g., the mountainous portions of the valley.

Rationale for RCL

Scenic zones where basic elements (form, line, color, texture) are natural conditions where management activities can be seen but do not attract attention. These are the most valued (most scenic) visual resources in the resource area.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Bill Schneider Area Number (from GIS Theme) VRM

Resource Visual Resources RCL (i.e., 1, 2 or 3) 2

Date 1/87

Description of Area (Species, number of acres, miles, etc.)

VRM Class III areas consist of _____ acres and Class IV consists of _____ acres. They comprise the majority of the visual zones in the resource area. Most of the lands are in the center portion of the valley where man-made influences are of important impact upon the landscape.

Rationale for RCL

In Class III areas contrasts to the basic elements caused by management activities are evident, but remain subordinate to the existing landscape.

In Class IV areas the contrast to the basic elements attract attention and are a dominant feature of the landscape in terms of scale. However, the contrast repeats itself in terms of form, line, color, and texture in the landscape.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Bill Schneider Area Number (from GIS Theme) VRM

Resource Visual Resources RCL (i.e., 1, 2 or 3) 3

Date 1/87

Description of Area (Species, number of acres, miles, etc.)

This is a management prescription of what could occur in the visual resource. Presently none of the area is in the RCL. This merely would change the VRM class from what is present today to a class one number lower.

For example, under this prescription an area could presently be a landscape where management activities do not attract attention (II). This prescription would allow a lessening of the zone to a landscape where management activities are evident (attract attention) but still remain subordinate to the surrounding landscape.

Rationale for RCL

This would allow for more intensive management of the visual resource by allowing more visual distraction, yet with a remaining concern for some of the visual resource.

DATA THEMES

All four of the VRM classes funding the resource area are digitized on 7½ "USGS Quad Sheets. In addition sensitivity levels and background distrance zones are indicated". This will give viewer the actual visual management class with rationale for arriving at each description. Zones include all BLM lands plus some private lands.

This theme is entitled "VRM".

REFERENCES

1. Land and Resource Management Plan, Rio Grande National Forest

2. S.C.O.R.P., Colorado D.P.O.R. 1986

CHAPTER 19

HISTORIC RESOURCES

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CHAPTER 19--HISTORIC RESOURCES

RESOURCE AREA PROFILE

Description

There are an estimated 39 historic sites, as inventoried by BLM, in the San Luis Valley. This does not include cities and towns where inventories have been conducted by local historical groups. Two overview documents have been written for this region. The first is: Land of Contrast, A History of Southeastern Colorado, by Frederic J. Athearn (Denver: Bureau of Land Management, 1985), and the second is: "Colorado Southern Frontier Historic Context", by Steven F. Mehls and Carrol Joe Carter, (Denver: Colorado Historical Society, 1984). Of the historic sites/ properties that have been inventoried by BLM, 15 are on BLM lands and 20 are adjacent to BLM lands. These sites vary in type from cemetaries, cabins, abandoned rail grades, mines, and trails, to ruins, foundations, and sites.

There are 16 historic properties listed in the National Register of Historic Places (NRHP), (Colorado Historical Society, October, 1986), and one property listed as a National Historic Landmark (NHL). Of these NRHP sites, one is located on (crosses) BLM land. It is the Cumbres and Toltec Scenic Railroad that runs south of Antonito, Colorado to Chama, New Mexico. The NHL is Pike's Stockade, owned by the Colorado Historical Society.

There is one site that may have religious significance on a local level. It is a "Spanish" Cross that overlooks the town of Mogotes, Colorado. It is located on BLM land and was erected in 1921 as part of the religious context of this region. The cross represents the Catholic religion and is not Native American in nature.

To date, none of the historic properties located on BLM lands have been formally evaluated for inclusion in the National Register of Historic Places as per 36 CFR Part 60.6.

Condition and Trend

Generally, historic properties are subject to weathering, vandalism, collapse due to neglect, fire, and other destructive elements. Because these sites are not being actively protected (i.e. "preserved"), they are subject to continuing loss. The general trend for historic properties is gradual deterioration eventually leading to total loss of these sites/properties.

Sites listed in the National Register of Historic Places (P.L. 89-665 and P.L. 91-243) are regarded as "important" and therefore, in theory, they are given more consideration than other sites. These properties tend to remain in relatively better condition because they often are still in use or at least "monitored" thanks to visitor use/interest. Examples are the Cumbres and Toltec Scenic Railroad, which is in daily operation as a tourist facility. Another example is Pike's Stockade (NHL), which, although not maintained, is monitored by local residents and visitors.

EXISTING MANAGEMENT SITUATION

Current Management

Current BLM policy requires that historic (and archaeological) properties be managed on a priority basis, beginning with those properties listed in the NRHP, and decending to those of minimal significance. While all sites may have intrinsic value, not all are fully managed. Thus, current management policy is reactive in that sites that may be affected by Bureau actions will be avoided, or, as appropriate, will be mitigated pursuant to 36 CFR Part 800. Management of these historic properties does not presently extend beyond avoidance/mitigation.

Supply-Demand Analysis and Dependency

Because historic resources are not a commodity per se, there is no demand for them in a market sense. They are fragile, nonrenewable resources that cannot be replaced once gone. In some cases, there is an economic value placed on historic sites in terms of removing parts of the site for decorative wood, antiques, etc. However, this is a very small demand as compared to other natural resources. Collecting "barn wood", and other artifacts, from Federal land is also illegal. More accurately, demand comes in the form of visitor use, interpretation of the site, and research potential of the site(s).

Supply of this resource is "continual" in the sense that all contemporary properties will eventually become historic in nature. However, historic properties are now in diminishing supply due to losses ranging from natural forces to human destruction.

Historic properties will always be in "demand" because human being have a strong interest in their past and in their roots. However, these properties are only in demand when they are "usable" by people. Restored buildings in downtown areas are economically viable when "reused". Restored cabins in a remote BLM area are not economically feasible nor are they readily accessible for public use and enjoyment. Therefore, the demand for such BLM sites is quite low. Nevertheless, there still may be a demand for this type of site by future generations and/or for research potential. On the other hand, properties such as the Cumbres and Toltec Scenic Railroad are in high demand by the public who is willing to pay for the use of this type of historic value.

CAPABILITY ANALYSIS

The term "capability" is not applicable for historic resources on a general basis. However, there are certain capabilities that various types of historic properties have, including National Register capability, the potential for National Register capability and the lack of National Register ability. Therefore, there are 3 levels of resource capability for historic properties. They are: Level 1, National Register listed properties; Level 2, those properties that are eligible for listing; and Level 3 those properties that do not qualify for the National Register of Historic Places.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Historic Resources (No. 19) Specialist Name R. Athearn

Date 11-22-86

Resource Capability Level 1 (define the highest priority for management)

Historic sites that are National Historic Landmark, or are listed in the National Register of Historic Places.

Resource Capability Level 2 (define the second highest priority for management)

Those historic sites/places that are eligible for listing in the National Register of Historic Places as per 36 CFR Part 63. These are sites that have been determined eligible for listing, but have not been listed. Some sites that may have potential for eligibility but are not listed in the National Register.

Resource Capability Level 3 (define the third highest priority for management)

All other historic sites/places that have research, interpretation, visitor use, or other potential, but are not necessarily eligible for inclusion in or listed in the National Register of Historic Places. By definition, those sites in capability Levels 1 and 2 have some or all of these attributes.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Historic Resources (No. 19)

Specialist Name R. Athearn Date 11-22-86

Describe the types of management that you would use in RCL 1 areas

1. Provide protection of site/place through active management.
2. This can include: fencing, signing, restoration, interpretation, closure, and other management actions that help preserve/save the site/place.
3. Provide research opportunities for scholars interested in sites of this type, but this research must be nondestructive to the site because it is National Register listed.

Describe the types of management you would use in RCL 2 areas

Since these sites are eligible for the National Register, they must be treated in a manner consistent with RCL 1. However, they can be managed in a slightly different manner:

1. Provide protection for these sites/places consistent with National Register sites (1) above. The management would be lesser priority for these sites than those in RCL 1.
2. Provide nomination for these sites as part of management procedure.
3. Provide research opportunities for scholars interested in these sites/places. This could be destructive research if the sites/places are not to be listed in the National Register.

Describe the types of management you would use in RCL 3 areas

These sites are not eligible to the National Register, but they may have other values such as scenic, interpretive, research, visual, localized interest, etc. These sites can be used for purposes such as visitor use, interpretation, destructive research, etc., as part of acceptable management for such sites.

1. Provide for visitor use of these sites including interpretation, signing, "hand on" demonstrations, etc.
2. Provide for use of these sites/places for destructive research, if appropriate.
3. Manage these sites for other values such as visual, scenic, etc.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name R. Athearn Area Number (from GIS Theme) No. 19

Resource Historic Resources RCL (i.e., 1, 2 or 3) 1

Date 11-12-86

Description of Area (Species, number of acres, miles, etc.)

There is one National Register of Historic Places site that is located on parts of BLM lands in the San Luis Valley. This is the Cumbres and Toltec Scenic Railroad which runs south from Antonito, Colorado and crosses BLM lands. This site is in operation currently and is an RCL 1 site. The Cumbres and Toltec's site number is 5-CN-642.

Rationale for RCL

National Register sites are mandated by law to be protected and preserved as part of the national heritage. Therefore have higher value than other sites that do not qualify for such listing. They have the capability of providing significant information or enjoyment for our historic past and they have intrinsic value for humanity. They are first priority for management and they must be managed in a manner consistent with their value.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name R. Athearn Area Number (from GIS Theme) No. 19

Resource Historic Resources RCL (i.e., 1, 2 or 3) 2

Date 11-12-86

Description of Area (Species, number of acres, miles, etc.)

There may be up to 5 historic properties in the San Luis valley on BLM lands that may be eligible for inclusion in the National Register of Historic Places. Their final status will depend on the determination of eligibility. If they are eligible and placed on the NRHP, they will become RCL 3 sites. These sites must be managed as RCL 1 sites until they are determined not to be eligible. The RCL 2 sites are:

5-SH-1065-HR (La Garita Wagon Ruts)
5-SH-1063-HE (Poncha Pass rail Line)
5-SH-1053-HE (Villa grove-Orient Railbed)
5-CN-650-HE (Kings Turquoise Mine)
5-SH-1066-HE (Ute Pass Road)

Rationale for RCL

National Register sites are mandated by law to be protected and preserved as part of the national heritage. Therefore have higher value than other sites that do not qualify for such listing. They have the capability of providing significant information or enjoyment for our historic past and they have intrinsic value for humanity. They are first priority for management and they must be managed in a manner consistent with their value.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name R. Athearn Area Number (from GIS Theme) No. 19

Resource Historic Resources RCL (i.e., 1, 2 or 3) 3

Date 11-12-86

Description of Area (Species, number of acres, miles, etc.)

An unknown number of historic properties, both inventoried and still to be discovered, exist in the San Luis Valley. Such sites, if they are not eligible for the NRHP, are Level 3 sites. These sites may have other "uses" such as interpretation, visitor use, or other values, but they are not NRHP eligible. Therefore, they may have more "use" potential than Level 1 or Level 2 sites. The capability of Level 3 sites may actually be higher than RCL 1 or RCL 2 sites.

At present, the following are inventoried RCL 3 sites (BLM land):

5-SH-1068-HR (Cabin)
5-SH-1062-HE (Bonanza Cemetery)
5-SH-1061-HE (Sedgwick Townsite)
5-SH-1055-HE (Villa Grove Cemetery)
5-SH-1052-HE (Crestone Railroad)
5-CN-649-HN ("Spanish Cross")
5-CN-648-HN (Cabins)
5-CN-647-HN (Ranch Site)
5-CN-646-HN (Canal)
5-CN-645-HN (Cabin)
5-CN-643-HN (La Sauces Cemetery)
5-CN-640-HN (Canal)
5-CN-639-HN (Graves)

Rationale for RCL

This type of sites requires minimal management. It also has the potential for"other uses" that might be destructive to the site, but that can provide a higher level of use. Such uses might include interpretation, visitor use, destructive research, etc. Level 3 sites have the potential of public use whereas Levels 1 and 2 sites are required to be protected.

DATA THEMES

(STILL MISSING)

Need a description of the GIS themes, how they can be used, what is the content, to include a listing of guads used.

REFERENCES

National Park Service. National Register of Historic Places, Annual Listing of Properties. Washington, D.C.: Government Printing Office, 1983

San Luis Valley Council of Governments. "Historical Site Inventory". Alamosa, Colorado: San Luis Valley Council of Governments, 1973

Mehls, Steven F. and Carrol Joe Carter. "Colorado Southern Frontier Historic Context". Denver: Colorado Historical Society, 1984

Athearn, Frederic J. Land of Contrast, A History of Southeast Colorado. Denver: Bureau of Land Management, 1985

Athearn, Frederic J. "A Brief History of the San Luis Valley". Denver: Bureau of Land Management, 1975

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ARCHEOLOGICAL RESOURCES

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CHAPTER 20--ARCHEOLOGICAL RESOURCES

RESOURCE AREA PROFILE

Description

There are approximately 2,500 archeological sites recorded by various agencies and groups throughout the planning area. There are 2,460 of these sites that have been officially recorded on the state of Colorado inventory system and have been assigned Smithsonnian numbers. Documents and studies of the prehistory of this region are few and outdated with the draft overview by J. Gunnerron comprise the only recent professional work that includes the San Luis Valley. Of the 2,460 sites inventoried and described, _____ are actually on Bureau of Land Management. These properties include archeological horizons representing the entire span of prehistory from paleo-Indian through historic tribes and vary from hunting, gathering, and habitations to religious locations.

The only archeological site currently on the National Registry of Historic Places (NRHP) is the Carnero Creek Rock Art location, which is not on public land. There are properties, however, (e.g., the Cattleguard Folsoum Site) that are very likely to be eligible for inclusion.

Current Native American tradition and religious interest may involve Blanca Peak to the east and Pole Mountain to the west but these areas are administered by the United States Forest Service.

Condition and Trend

Archeological sites in general are subject to continual loss through natural forces of exposure and erosion and through human agents prompted by benign curiosity, sytematic collecting, and premeditated vandalism. These processes have been occasionally delayed or halted through natural a gradation, protection, or data recovery. The general trend, however, is ultimate loss of these resources.

Sites listed in the National Register of Historic Places (P.L. 89-665 and P.L. 91-243) are regarded as "important" and therefore, in theory, they are given more consideration than other sites. These properties tend to remain in relatively better condition because they often are still in use or at least "monitored" thanks to visitor use/interest. Examples are the Cumbres and Toltec Scenic Railroad, which is in daily operation as a tourist facility. Another example is Pike's stockade (NHL) which, while not maintained, is monitored by local residents and visitors.

EXISTING MANAGEMENT SITUATION

Current Management

Current BLM policy requires that archaeological properties be managed on a priority basis, beginning with those properties listed in the NRHP, and decending to those of minimal significance. While all sites may have intrinsic value, not all are fully managed. Thus, current management policy is reactive in that sites that may be affected by Bureau actions will be avoided, or, as appropriate, will be mitigated pursuant to 36 CFR Part 800. Management of these properties does not presently extend beyond avoidance/mitigation.

Supply-Demand and Dependency

The most common demand is collecting and "pot-hunting", illegal activities that may reflect an illegal market. Benign and professional interests should be reflected in interpretation, education, and research. As long as there are collectors and an educated public, the demand will be continual, both legally and illegally. Congruent with this demand and committant loss of resource might be an increase in local museum activity.

CAPABILITY ANALYSIS (CA)

The following forms describe the definition of the capability resource levels (RCL's), and the management practices to be applied to each particular RCL, and give the specific site(s) that fall within each RCL.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Archeological Resources Specialist Name J. Beardsley

Date 11-22-86

Resource Capability Level 1 (define the highest priority for management)

Archaeological sites or districts that are listed in the NRHP.

Resource Capability Level 2 (define the second highest priority for management)

Those sites or districts that have been determined eligible but have not yet been listed.

Resource Capability Level 3 (define the third highest priority for management)

Those sites or areas which, of themselves, do not appear to qualify for inclusion on the NRHP but exhibit potential for education, interpretation, visitor use, or particularistic research.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Archaeology Resource

Specialist Name J. Beardsley Date 11-22-86

Describe the types of management that you would use in RCL 1 areas

1. Active protection through patroling, fencing, physical degradation, closure and any other management action designed for preservation and/or minimal impact.
2. Provide research opportunities for scholars, which in some cases will enhance the site through partial disturbance.

Describe the types of management you would use in RCL 2 areas

Nominate to the NRHP, then manage according to RCL 1.

Describe the types of management you would use in RCL 3 areas

1. Provide education opportunities through the local archaeological and historical societies.
2. Conduct vandalism research.
3. Encourage basic research such as graduate or undergraduate level.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name J. Beardsley Area Number (from GIS Theme) _____

Resource Archeology Resources RCL (i.e., 1, 2 or 3) 1

Date 11-12-86

Description of Area (Species, number of acres, miles, etc.)

None, at present are listed in the NRHP.

Rationale for RCL

N/A

Note: National Register sites are mandated by law to be protected and preserved as part of the national heritage. Therefore, they, have higher value than other sites that do not qualify for such listing. They have the capability of providing significant information or enjoyment for our historic past and they have intrinsic value for humanity. They are first priority for management and they must be managed in a manner consistent with their value.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name J. Beardsley Area Number (from GIS Theme) _____

Resource Archeology Resource RCL (i.e., 1, 2 or 3) 2

Date 11-12-86

Description of Area (Species, number of acres, miles, etc.)

The Cattleguard Folsoum man site appears likely to qualify. Others may be found as the process of identification/evaluation continues.

Rationale for RCL

Site(s) need to be protected in order to maintain there significance.

Note: There are no National Register of Historic Places sites presently on BLM. However, there is the potential of at least 10 NRHP sites. If these sites, other than the Cumbres and Toltec Scenic railroad, which is on the NRHP but only crosses BLM lands, should be placed on the register, they would be managed as Capability Level 1.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name J. Beardsley Area Number (from GIS Theme) _____

Resource Archeology Resources RCL (i.e., 1, 2 or 3) 3

Date 11-12-86

Description of Area (Species, number of acres, miles, etc.)

All other sites identified.

An unknown number of historic properties, some inventoried, and some still to be discovered, exist in the San Luis Valley. Such sites, if they are not eligible to the National Register, or listed in the register, are Level 3 sites. These sites are those that may have interpretive, visitor use, or other values, but are not Register quality. Therefore, they may have more potential for "use" than Level 1 and Level 2 sites. The capability of Level 3 sites may be higher than Levels 1 and 2.

Rationale for RCL

Note: This type of sites requires minimal management. It also has the potential for "other uses" that might be destructive to the site, but that can provide a higher level of use. Such uses might include interpretation, visitor use, destructive research, etc. Level 3 sites have the potential of public use whereas Levels 1 and 2 sites are required to be protected.

DATA THEMES

(STILL MISSING)

Need a description of the GIS theme, include which guads maps were used.

REFERENCES

Need all references used.

Register of Historic Places, Annual Listing of Properties. Washington, D.C.: Government Printing Office, 1983

CHAPTER 21

FIRE MANAGEMENT

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CHAPTER 21--FIRE MANAGEMENT

RESOURCE AREA PROFILE (RAP)

Description (Condition and Trend)

Historically the SLRA has had very few wildfires. Over a ten year period (1975-1985), the SLRA experienced 1.4 wildfires per year, all in the Class A size (0 to .25 AC.) or Class B size (.26 to 9.99 AC). Sixtyfour percent of these wildfires occurred between Saguache and Poncha Pass (near Poncha Springs). Lack of occurrence is attributed to rainfall falling on burn starts immediately after lightning storms pass through the area. Unless the historical weather pattern changes dramatically, wildfire occurrence (starts) in the SLRA will remain very low. At this time there is no man-caused fire related problems in the SLRA.

EXISTING MANAGEMENT SITUATION (EMS)

Current Management and Situation

Due to the low fire occurrence, all wildfires in the SLRA are initial attacked and suppressed by the United States Forest Service under a memorandum of understanding with the BLM. This agreement has deleted all duplication of manpower and equipment while providing a cost savings to the Bureau.

A fire management plan was developed for the SLRA in 1986. This plan provides two suppression zones and techniques for wildfire protection in the SLRA. These zones are described as follows:

Full Suppression Zones - are designed to provide maximum protection for human life, property and improvements and high value natural resources.

Least Cost Suppression Zones - are designed to minimize fire suppression cost while maximizing resource losses due to fire suppression operations. This maximizes fire fighter safety and minimizes impairment to natural resources. All WSAs, ACECs, SRMAs, etc., and/or wilderness areas will be managed within this zone of protection.

CAPABILITY ANALYSIS

The following forms describe the definition of the capability resource levels (RCL's), the management practices to be applied to each particular RCL, and specific area with each RCL. Only two RCL's were determined to be used in the plan.

SLRMP MSA

CAPABILITY ANALYSIS FROM 1

DEFINITIONS OF RESOURCE CAPABILITY LEVELS

Resource Wildfire Management Specialist Name Harold May

Date 1-8-87

Resource Capability Level 1 (define the highest priority for management)

Full Suppression Zone - provide maximum protection for human life, property/improvement and high valued natural resources.

Resource Capability Level 2 (define the second highest priority for management)

Least Cost Zones - minimize fire suppression cost while maximizing resource losses due to fire operations.

SLRMP MSA

CAPABILITY ANALYSIS FROM 2

MANAGEMENT PRACTICES

Resource Name Fire Management

Specialist Name Harold May Date 1-8-87

Describe the types of management that you would use in RCL 1 areas

1. Provide high intensity suppression levels, where the full complement of equipment and work forces will be used aggressively.

Describe the types of management you would use in RCL 2 areas

1. All areas not identified in (1) above will be in the least cost zone, where the intensity of suppression action is not fixed and will vary with the conditions occurring at the time of the fire start.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Harold May Area Number (from GIS Theme) _____

Resource Fire Management RCL (i.e., 1, 2 or 3) 1

Date 1-8-87

Description of Area (Species, number of acres, miles, etc.)

These _____ acres, in order to protect historical and natural resources, will be given high intensity fire suppression.

Rationale for RCL

These acres consist of specific historical sites needing protection e.g., cabins, foundations, etc., and commercial timber stands with high value marketable timber resources.

SLRMP MSA

CAPABILITY ANALYSIS FORM 3

RESOURCE CAPABILITY LEVEL DESCRIPTIONS

Specialist Name Harold May Area Number (from GIS Theme) _____

Resource Fire Management RCL (i.e., 1, 2 or 3) 2

Date 1-8-87

Description of Area (Species, number of acres, miles, etc.)

These _____ acres will be least cost fire suppression. This basically is the majority of the public lands in the SLRA.

Rationale for RCL

Level of intensity of suppression is not fixed and will vary based on conditions at fire start.

DATA THEMES

The data theme "FRE" will show only these areas within the RCL No. 1 needing a special or higher intensity of fire suppression. _____ maps are available in the data base, they describe the planning units which have RLC No. 1 sites within them. These are named _____, _____, _____, _____, _____. Also, an areawide map is shown for RCL No. 1.

REFERENCES

1. Canon City District Fire Management Plan. Canon City District, Bureau of Land Management - September 1986.

CHAPTER 22

SOCIAL AND ECONOMIC CONDITIONS

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CHAPTER 22--SOCIAL AND ECONOMIC CONDITIONS

RESOURCE AREA PROFILE

Description

Population

The population of the four county economic study area (ESA) consists of Alamosa, Conejos, Rio Grande, and Saguache Counties. The total population for the area over a 15 year period has increased about 6.8 percent. Alamosa and Rio Grande Counties experienced the largest increases in population. Alamosa County has the largest population of the four counties in the ESA (see Table 22-1).

Ethnic and/or Minority Composition

One of the most significant socio-economic characteristic of the ESA is its large number of Spanish speaking and Spanish surname population. The ESA has a Spanish language or Spanish surname population of 45 percent of its total population. On the other hand the state of Colorado shows a 17 percent Spanish population.

The ESA is primarily a rural region. The 1980 census classified _____ of the population as rural.

Population Projections

The San Luis Valley Regional Development and Planning Commission have found the population growth projection for the Region have generally been unreliable.[1/] Only Alamosa County is predicted to gain any population over the 1985 to 2010 period. Over all for the ESA the population is projected to decrease by 2 percent.

Employment and Income

Employment in three sectors, retail trade, services and government make up over 55 percent of the ESA's employment. The farming sector employs 16 percent of the ESA labor force. The largest area of employment, 21 percent, is in the service sector. The second largest area of employment is the government sector with 19 percent (see Table 22-2).

The manufacturing sector of the ESA only employs 3 percent of the workforce. Mining employment appears to be zero at the present for the area.

When looking at the individual counties a different pattern emerges. Conejos County, for example, has 32 percent of its labor force relating to farming. Farming is also the largest employer for Saguache County, 27 percent. Employment in agriculture and government accounts for 51 percent of county employment in Saguache.

1/ Page 14 Region 8 Overall Economic Development Plan
San Luis Valley Regional Development and Planning Commission. 1984.

Alamosa employs over 66 percent in retail trade, service, and government, while 9 percent of its labor force is in farming employment. The top three employers for Rio Grande County are first, the service sector 20 percent, government sector 16 percent, and farming sector 15 percent of the county's employment.

Income statistics (Table 22-3) mirror the employment statistics. Retail trade (Table 22-4), service, and government are the largest contributors to labor income. Farm proprietors' income seems to be erratic over the three year period as it went from 10 percent of earnings in 1982 to 3 percent of earnings in 1983, then to 13 percent of earnings in 1984. For Saguache County the farm income, on the other hand, is a large part of the county's income.

Government Finances

Table 22-5 represents data on the ESA counties source of revenues and expenditures. Alamosa and Rio Grande Countie have the larger revenue and expenditures. Alamosa County has the largest expenditure for public safety, public works and public health.

Lifestyle

The lifestyles with the ESA are varied. The lifestyle in Saguache County is centered around farming and ranching economy. Most of the ranches are family owned and operated. The large towns of Alamosa, in Alamosa County and Del Norte and Monte Vista in Rio Grande County provide retail trade and support services facilities for the surrounding smaller communities and rural areas in the ESA. Alamosa, an academic community associated with Adams State College, offers cultural activities. The rural areas support a ranching and farming lifestyle with rodeos, 4H Clubs, Boy Scouts, and riding clubs.

EXISTING MANAGEMENT SITUATION

All resource management plan alternative may affect employment population and income in the area. Most of the effects will likely occur in to agriculture and ranching sectors and the retail sector. These pertors of all economy maybe affected by changes in grazing and recreation opportunities.

The Forest Service input - output model IMPLAN will be reset to evaluate the effects of various resource levels on employment, population and income.

DATA THEME

(STILL MISSING)

Need discussion of ADA GIS theme here.

REFERENCES

Bureau of Economic Analysis, Various Years, Regional Economic Information System

Colorado Departement of Local Affairs, Division of Local Government, Demography Section, Various Years

Colorado Department of Revenue, 1985 Annual Report Denver

U.S. Forest Service, Final Environmental Input Statement Rio Grande National Forest

BLM San Luis Valley Resource Area - Social Economic Profile, James M. Mason 1974

San Luis Valley Regional Development and Planning Commission, Region 8 Overall Economic Development Plan December 1984

Table 22-1

Population by County
1970 - 2010

	1970	1975	1980	1985	Percent Change (1970-1985)	1990	1995	2000	2005	2010	Percent Change 1985-2010
Alamosa County	11,484	11,658	11,852	12,496	8.8	13,043	13,458	13,801	14,166	14,560	16.5
Conejos County	7,829	8,034	7,786	7,992	2.1	7,848	7,637	7,347	7,023	6,677	-16.5
Rio Grande County	10,453	10,795	10,576	11,456	9.6	11,548	11,540	11,465	11,396	11,344	-1.0
Saguache County	3,833	4,098	3,947	3,946	2.9	3,729	3,452	3,134	2,809	2,475	-37.3
TOTAL ECONOMIC STUDY AREA	33,599	34,585	34,161	35,890	6.8	36,168	36,087	35,747	35,394	35,056	-2.0

Source: Colorado Division of Local Government, Demography Section

Table 22-2

Employment and Labor Force by County

	Alamosa County			Conejos County			Rio Grande County			Saguache County			ESA	ESA	ESA
	1982	1983	1984	1982	1983	1984	1982	1983	1984	1982	1983	1984	1982	1983	1984
Mining	0	0	0	0	0	0	11	0	0	0	0	0	11	0	--
Construction	361	366	392	72	73	76	253	231	255	0	73	84	686	743	807
Manufacturing	165	151	89	141	98	86	365	337	292	21	22	26	692	608	493
Transportation	345	298	272	67	66	75	189	195	198	33	33	34	634	592	579
Wholesale Trade	221	239	309	37	35	33	365	337	366	86	84	67	709	695	775
Retail Trade	1,286	1,265	1,309	175	181	183	746	742	700	154	144	146	2,361	2,332	2,338
Finance, Insurance, Real Estate	474	569	386	56	56	66	286	297	309	0	92	70	816	1,014	831
Services	1,531	1,588	1,669	380	386	395	1002	1,024	1,043	166	175	202	3,079	3,173	3,305
Government	1,213	1,221	1,203	484	499	506	842	840	832	389	392	378	2,928	2,952	2,919
Misc. Agricultural Svcs.	0	0	0	0	0	0	338	0	0	0	112	0	338	112	0
TOTAL NON-FARMING	5,728	5,823	5,763	1,646	1,640	1,670	4,397	4,332	4,440	1,180	1,133	1,154	12,951	12,928	13,027
Farming	583	564	554	815	785	768	829	794	772	462	444	434	2,689	2,587	2,528
Not Classified Elsewhere	132	126	134	234	246	250	0	329	445	331	6	147	697	707	976
TOTAL EMPLOYMENT BY PLACE OF WORK	6,311	6,387	6,317	2,461	2,425	2,438	5,226	5,126	5,212	1,642	1,577	1,588	15,640	15,515	15,555
COUNTY LABORFORCE															
Employment	5,671	5,411	5,428	2,306	2,175	2,159	5,086	4,479	4,386	1,926	1,456	1,452	14,989	13,521	13,425
Unemployment	568	421	497	573	476	460	522	527	499	263	279	229	1,926	1,703	1,685
TOTAL LABORFORCE BY PLACE OF RESIDENCE	6,239	5,832	5,925	2,879	2,651	2,619	5,608	5,006	4,885	2,189	1,735	1,681	16,915	15,224	15,110

Source: Bureau of Economic Analysis

Table 22-3

Earnings by Place of Work by County
(000)

	Alamosa County			Conejos County			Rio Grande County			Saguache County			ESA	ESA	ESA
	1982	1983	1984	1982	1983	1984	1982	1983	1984	1982	1983	1984	1982	1983	1984
Earnings by Type:															
Wage & Salary Disbursements	59,394	64,083	61,739	16,832	17,027	17,871	44,717	45,059	47,258	10,451	10,113	11,042	131,394	136,282	137,910
Other Labor Income	4,907	5,624	5,687	1,225	1,290	1,388	3,784	4,088	4,422	648	672	838	10,564	11,674	12,335
Proprietors' Income	11,900	12,048	16,958	2,503	1,749	4,142	12,004	8,565	13,686	4,742	3,757	8,061	31,149	26,119	42,847
Farm Prop. Income	3,691	2,564	6,198	317	745	1,367	5,897	1,253	5,358	2,909	1,556	5,545	12,814	4,628	18,468
Non-Farm Prop. Income	8,209	9,484	10,760	2,186	2,494	2,775	6,107	7,312	8,328	1,833	2,201	2,516	18,335	21,491	24,379
Earnings by Industry:															
Farm Wage & Salary Income	5,493	4,317	8,013	3,296	2,156	4,372	10,938	6,182	10,472	5,431	4,041	8,131	25,158	16,696	30,988
Non-Farm Wage & Salary Income	70,708	77,438	76,371	17,264	17,910	19,029	49,567	51,530	54,894	10,410	10,501	11,810	147,949	157,379	162,104
Private Wage and Salary Income	53,441	59,164	57,274	11,463	11,604	12,391	38,007	39,118	41,945	6,258	6,016	7,193	109,169	115,902	118,803
Agri. Services, Forestry, Fish and Other Game	--	--	--	--	--	--	2,704	--	--	--	766	--	2,704	766	--
Mining Income	--	--	--	--	--	--	124	--	--	--	--	--	124	--	--
Construction Income	4,294	4,820	6,277	340	386	464	2,383	2,268	2,762	--	770	1,013	7,017	8,244	10,516
Manufacturing Income	1,993	1,668	1,080	1,563	1,329	1,455	5,944	5,958	5,704	200	211	282	9,700	9,166	8,521
Non-Durable Goods Inc.	1,806	1,518	925	--	--	--	2,958	2,594	2,207	--	--	--	4,764	4,112	3,132
Durable Goods Income	187	150	155	1,539	1,299	1,418	2,986	3,364	3,497	200	211	282	4,912	5,024	5,352
Transportation & Public Utilities Income	8,746	8,029	7,412	1,225	1,335	1,542	3,491	3,642	3,959	340	421	403	13,802	13,427	13,716
Wholesale Trade Income	3,117	3,457	4,317	489	505	533	5,417	5,391	5,989	1,078	947	1,028	10,101	10,300	11,867
Retail Trade Income	10,798	11,606	12,155	1,376	1,512	1,619	6,296	6,494	6,361	1,066	1,042	1,124	19,536	20,654	21,259
Finance, Insurance & Real Estate Income	5,438	8,672	3,781	547	631	746	1,834	2,343	2,511	--	700	423	7,819	12,346	7,551
Services Income	17,046	18,796	20,517	3,648	3,404	3,362	9,814	10,290	10,901	1,098	1,196	1,431	31,606	33,686	36,211
Govt. & Govt. Enterprises Income	17,267	18,274	19,097	5,801	6,306	6,638	11,560	12,412	12,949	4,152	4,485	4,617	38,780	41,477	43,301
Federal, Civilian Income	3,386	3,901	4,063	798	977	1,012	3,209	3,471	3,327	686	753	683	8,079	9,102	9,085
Military Income	292	329	291	164	195	190	233	272	265	85	99	96	774	895	842
State & Local Government Income	13,589	14,044	14,743	4,839	5,134	5,436	8,118	8,669	9,357	3,381	3,633	3,838	29,927	31,480	33,374

Source: Bureau of Economic Analysis

Table 22-4

Retail Sales ($000) by Sector and County

1985

	Alamosa	Conejos	Rio Grande	Saguache
Agriculture	35	40	57	32
Mining	0	111	0	0
Construction	3,490	144	5,551	366
Manufacturing	113	5	4,270	17
Wholesale Trade	8,252	4,963	2,299	37
Retail Trade	99,104	15,490	96,169	17,067
Finance, Insurance, Real Estate	0	0	43	3
Hotels	4,247	821	2,919	42
Misc. Services	6,396	694	4,067	353
Government	0	0	0	12
Non-Classified	0	0	0	0
TOTAL RETAIL SALES	132,269	25,538	131,290	20,947

Source: Colorado Department of Revenue

Table 22-5

County Revenues and Expenditures for 1984

	Alamosa (000)	Conejos (000)	Rio Grande (000)	Saguache (000)
Total Revenue	6,155	3,774	4,753	3,263
Taxes - Total	2,389	492	1,232	521
Licenses & Permits	6	1	13	2
Charges for Services	351	116	141	220
Fines & Forfeits	2	--	4	--
Miscellaneous - Total	388	158	466	90
Inter-governmental - Total	3,018	3,005	2,894	2,428
Total Operating Expenditures	4,779	3,541	3,498	2,691
General Government	785	501	578	495
Public Safety - Total	457	209	292	223
Public Works - Total	940	646	488	950
Health	290	186	99	165
Culture & Recreation	84	80	65	64
Miscellaneous	91	127	4	18
Capital Outlay	469	210	862	102
Debt Service - Total	579	—	—	--
Transfer Out	71	—	61	2

Source: Colorado Division of Local Government.

CHAPTER 23

HAZARDS

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EXISTING MANAGEMENT SITUATION

Current Management

Before the Federal Land Policy and Management Act of 1976 mining activity had very little management. After FLPMA any mining activity greater than 5 acres is required to submit a proposal with a plan of Operation and Reclamation Plan, to the Bureau of Land Management and to the Colorado Mine Land Reclamation Board. Activities less than 5 acres require a notice to BLM and to the CMLRB.

In areas where illegal dumping is a problem, in most cases signs have been posted indicating a no dumping zone.

There has been very little management in areas where old and dilopidated buildings are a potential threat to public safety.

The following forms describe the definition of the capability resource level (RCLs), the management practices to be applied to each particular RCL, and the specific site(s) within each RCL.

DATA THEMES

(STILL MISSING)

Need a description of the GIS theme, how it can be used, what is the content, to include a listing of guads used.

REFERENCES

(MISSING)

Need a listing of all reference documents and people talked to . . . . to include CSO/DO/area personnel, etc.

- Ken Goodrow National Resource Specialist, SLRA, BLM

BLM LIBRARY
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